

# Delaware and Hudson Canal Company Locomotives and Roundhouses



"D&H No. 500, Passing through Carbondale, November 9, 1951." No. 500 was built by ALCo in 1903. Photo by Bob Collins. Post card in the collection of the Carbondale Historical Society.

By

S. Robert Powell, Ph.D.

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A History of the  
**Delaware and Hudson Canal Company**  
in 24 Volumes

S. Robert Powell, Ph.D., 1974  
Indiana University, Bloomington, IN

I	Gravity Railroad: 1829 Configuration
II	Gravity Railroad: 1845 Configuration
III	Gravity Railroad: 1859 Configuration
IV	Gravity Railroad: 1868 Configuration
V	Gravity Railroad: 1899 Configuration
VI	Waterpower on the Gravity Railroad
VII	Working Horses and Mules on the Gravity Railroad
VIII	Passenger Service on the Gravity Railroad
IX	Farview Park
X	The Steam Line from Carbondale to Scranton (the Valley Road)
XI	The Jefferson Branch of the Erie Railroad (Carbondale to Lanesboro)
XII	Reaching Out: D&H Steam Lines beyond the Lackawanna Valley
XIII	Troubled Times—the 1870s
XIV	Carbondale Stations, Freight Houses, and the Carbondale Yard
XV	Locomotives and Roundhouses
XVI	Rolling Stock: Freight and Passenger
XVII	Anthracite Mining in the Lackawanna Valley in the Nineteenth Century
XVIII	Breakers
XIX	The Stourbridge Lion
XX	The Honesdale Branch of the D&H
XXI	The Anthracite Coal Strike of 1902
XXII	The People: the D&H, the Community
XXIII	The Quality of Life in the Lackawanna Valley in the Nineteenth Century
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## Telling the Story

Two important sources of information about the Delaware and Hudson Canal Company—and its successors—in the twentieth and twenty-first centuries are (1) the *Bulletins* of the Bridge Line Historical Society, and (2) the electronic media (railroad groups on *Facebook*).

The Bridge Line Historical Society *Bulletin* is 26 years old this year. The president of the BLHS is John Milczarek. The editor of the excellent BLHS monthly *Bulletin* is Barbara Bachorz; the publisher is Jim Bachorz. A broad array of first-class writers, some of whom are former D&H employees, write monthly columns for the *Bulletin* on a broad range of topics: "BLHS News and Views" (Barbara Bachorz), "Curmudgeon's Corner" (Jim Bachorz), "The Receiving Yard" (Doug Barron), "Swap Shop" (Frank Dutton), "From the Top" (Howard Hontz), "The Metropolis Monograph" (Robert A. Lowe), "The President's Report" (John Milczarek), "Traction Action" (Dick Sliber), "Open Platform Observations" (Steve Wagner), "Reminiscing" (Rev. Walter F. Smith), and "The Railroad Archaeologist" (Scott Whitney).

Regular columns include: "The Mail Car" (mail from readers), "Media in Review" (Steve Wagner), "Black Flags" (Doug Barron), "The Preservation Scene" (Jim Bachorz), "Modeling Matters" (Steve Wagner), "Off the Net" (Jim Bachorz), and "Industry News" (Jim Bachorz). Special issues on a single topic are published regularly ("The D&H to Albany: Yesterday on the Albany & Susquehanna" by Gary L. Schermerhorn; "Yesterday at Mechanicville" by Jim Shaughnessy). In addition, each issue of the *Bulletin* contains many full-page photos, with detailed captions, showing D&H, CP, S&NC, and NS steam locomotives, diesels, trains, and other features of those rail lines.

Anyone with an interest in the D&H can surely learn a lot from each issue of the *Bulletin* of the BLHS. Given the fact that this publication is carefully read by a large and diverse public, the accuracy of the vast amount of data that is presented in each issue is, in effect, double checked for accuracy by the large and diverse readership.

One can also learn a lot about the D&H from railroad groups on *Facebook*. As with the BLHS *Bulletin*, there is a good fact-checking mechanism built into *Facebook*. If the data reported in a given post or about a photo on *Facebook* by a member of a railroad group is not correct or needs clarification, someone, somewhere will spot the error come forward and the correction will be made—which is wonderful. All of us are in this together, and we all need each other. In the meantime, let's give it our best to record facts, not guesses or opinions (unless they are reported as such as the time of posting). In the long run, everyone benefits.

Recording an accurate history of the D&H, for the record, is the name of the game. Recording that history in a meaningful context and structure is the primary objective of all of the volumes in this series.

S. Robert Powell  
February 16, 2016

## Overview

The industrial revolution in America was born on October 9, 1829, in Carbondale, PA, when the first cut of Delaware & Hudson Gravity Railroad coal cars, loaded with mass produced anthracite coal, headed up Plane No. 1 out of Carbondale for Honesdale and to market in New York City.

Those cars, filled with anthracite coal from mines in Carbondale, traveled over 16 miles of railroad tracks, made up of eight inclined planes and three levels, to Honesdale, where the coal was transferred into canal boats and hauled 108 miles, through the D&H Canal, to the Hudson River.

Most of the coal that was sent through the D&H system in the course of the nineteenth century was shipped south on the Hudson River to the New York metropolitan market and to many ports on the Atlantic seaboard, north and south of New York. A large quantity of anthracite coal was also shipped up the Hudson River to Albany, and shipped through the Erie Canal to the American Midwest.

The mining, manufacturing, and transportation system that became operational on that day between the anthracite mines of the Lackawanna Valley and the retail markets for that coal on the eastern seaboard and in the American Midwest was the product of enlightened entrepreneurial, technological, and managerial thought on the part of the officers, managers, directors, and employees of the Delaware and Hudson Canal Company. That system, the first private sector million-dollar enterprise in American history, was, at the same time, the pioneer expression on this continent of mass production, a mode of production that would thereafter characterize industry in America and around the world.

Mass production, the revolutionary engine that made it possible for the D&H to launch its mining, manufacturing, and transportation system in Carbondale on October 9, 1829, and to perpetuate that system well into the 20<sup>th</sup> century, came into existence when it did and lasted for as long as it did because a body of employees

and managers, within the context of a community, of which both groups were a part, chose to work together for their mutual benefit and enrichment, to mass produce and market a commodity, and in so doing to implement the clearly articulated production and marketing objectives of “the company,” the Delaware and Hudson Canal Company.

In this 24-volume work on the D&H,\* we will (1) document the history of that mining, manufacturing, and transportation system, with a special focus on the rail lines of the Delaware and Hudson Canal Company in northeastern Pennsylvania, from the opening of the D&H Gravity Railroad in 1829 to the anthracite coal strike of 1902; and (2) demonstrate that the history of that mining, manufacturing, and transportation system, the D. & H. C. Co., from 1829 to 1902, is, at the same time, not only an illustration of eight decades of fine tuning by the D&H of their mass production procedures and techniques but also a full-bodied expression and record, both from the point of view of the D&H and from the point of view of its employees, of the birth, development, and first maturity of the industrial revolution in America.

This is a success story, directed by America’s pioneer urban capitalists, and implemented by them and the tens of thousands of men, women, and children who emigrated from Europe to the coal fields of northeastern Pennsylvania in the nineteenth century to work for and with the D&H and to start their lives over again. This is a success story that is important not only within in the context of local, state, and regional history but also within the context of American history. It is a compelling story.

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\*The present volume focuses on *Locomotives and Roundhouses*. Each of these 24 volumes will focus on one aspect of the history of the Delaware and Hudson railroad, from the opening of the Gravity Railroad in 1829 to the anthracite coal strike of 1902. Each volume will be an autonomous entity and published separately.



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## Locomotives and Roundhouses

1501

### Locomotives

Essential documents in any discussion of D&H locomotives are the seven rosters, *Rosters A-G*, compiled by Richard E Cooper, that are given at the conclusion (pp. 445-470) of Jim Shaughnessy's *Delaware & Hudson*. Those rosters are titled as follows:

- A *MOTIVE POWER OF DELAWARE & HUDSON R. R. 1915-1967 Compiled by Richard E. Cooper.* (pp. 445-466)
- B LOCOMOTIVES OF THE D&H CANAL CO.'s GRAVITY RAILROAD (p 467)
- C LOCOMOTIVES OF THE ALBANY & SUSQUEHANNA RAILROAD (at the time of the lease to the D&H C. Co. in 1870) (p. 467)
- D LOCOMOTIVES OF THE RENSSELAER & SARATOGA and preceding lines (pp. 468-469)
- E LOCOMOTIVES OF THE ADIRONDACK RAILROAD (p. 470)
- F LOCOMOTIVES OF THE CROWN POINT IRON CO.'S RAILROAD (p. 470)
- G LOCOMOTIVES OF THE CHATEAUGAY ORE & IRON CO.'S THREE-FOOT GAUGE RAILROAD (p. 470)

Those rosters constitute a remarkable research document and we all refer to them regularly. They constitute a remarkable and a significant contribution to the history of railroads in America. Our thanks to and three cheers for Richard E. Cooper.

Before we take a close look at, in the pages that follow, a wide variety of D&H locomotives, it would be well to take a broad look at the locomotives of the D&H, starting in 1829, when the D&H owned, possibly,\* four locomotives: *Delaware*, *Hudson*, *America*, and *Stourbridge Lion*.

\* In Volume XIX in this series we will take a close look at the *Stourbridge Lion* and the other locomotives ordered by Horatio Allen for the D&H during his well-known trip to England. The question to be answered (and our answer will be given in Volume XIX) is this: How many engines did Horatio Allen order when in England? The standard D&H histories say that he ordered four (*Delaware*, *Hudson*, *America*, *Stourbridge Lion*), but Horatio Allen himself, in 1883, publicly stated that he ordered only three locomotives for the D&H during his trip to England.

Leaving aside, for the moment, those (three or four) engines owned by the D&H in 1829, by 1880, as we learn from *The Delaware and Hudson Company INSPECTION of LINES :: JUNE 7, 8, 9, 1929*, p. 40 (see chart on the following page), the D&H owned 185 locomotives.

Commencing with a total ownership of four locomotives in 1829, the total had grown in 1880 to 185. The increase since that time is illustrated by the table which follows:

Year	Type of Locomotive and Number in Service			Total	Total Tractive Power Pounds
	Freight	Passenger	Switching		
1890	230	16	86	332	
1900	234	78	52	364	
1910	321	82	44	447	14,639,487
1920	371	79	40	490	19,679,550
1929	331	50	* 68	449	20,150,400

\* Includes three work locomotives.

Look at those remarkable numbers:

- 322 locomotives in 1890, 364 in 1900, 447 in 1910, 490 in 1920, and 449 in 1929.
- 1920 was the peak year in total number of locomotives in service: 490.
- 1910 was the peak year in total number of passenger locomotives in service: 82.
- Note the decline in number of passenger locomotives between 1910 and 1929: 82 in 1910, 79 in 1920, 50 in 1929.
- Note the decline in number of freight locomotives between 1920 and 1929: 371 in 1920, and 331 in 1929.

The tractive power numbers in that chart are also interesting. As we begin this look at the locomotives of the D&H, a definition of *tractive effort* is in order. Here is a definition of that much used term from *The Delaware and Hudson Company INSPECTION of LINES :: JUNE 7, 8, 9, 1929*, p. 40:

**“Tractive effort of locomotives:** A convenient and much used method of indicating the power of a locomotive is to state its tractive effort in terms of pounds. Tractive effort may be described as the effort exerted in turning the wheels by the action of the steam against the pistons which, through the medium of crossheads, connecting rods, etc., causes them to revolve and the

locomotive to move along the rails. The tractive effort of the 'Stourbridge Lion' was calculated at from 1,750 to 2,000 lbs. That of the 'John B. Jervis' is calculated at 85,200 lbs. In 1829 four locomotives were owned. Assuming them each to have a tractive effort of 2,000 lbs., the total available tractive power was 8,000 lbs. Now [1929] in the 449 locomotives owned the total available tractive power in 20,150,400 lbs."

### **From the Moguls to the Second-Generation Diesels:**

Here are some general/summary statements about D&H engine types from the mid-1880s to the second-generation diesels in 1964 that will be useful to the reader. Excellent material on this same question is given in *Shaughnessy*, Chapters 11-13, pp. 273-374.

#### **1. Moguls** (mid-1880s; backbone of D&H motive power up to the late 1890s):

In *Shaughnessy*, we read the following about the early D&H engines: "By the mid-1880s, practically all the primitive American types obtained from the leased lines [A&S, 1870; R&S, 1871] were replaced by a fleet of medium size Moguls that became the backbone of the motive power fleet until the late 1890s." (*Shaughnessy*, p. 317)

#### **2. Consolidations** (early 1880s):

In 1882, the D&H asked Dickson Locomotive to come up with a larger locomotive. They created the 2-8-0 Consolidation (three of these could push 1,000 tons up Belden Hill). There were 36 Consolidations in service by the end of nineteenth century. These Consolidations got bigger and bigger: Class E, E-1, E-2, E-2a, E-3, E-4, E-5. When Loree took over in 1907 there were over 200 2-8-0s (which replaced largely all the Moguls in main-line service). Heavier engines meant new roadbeds, bridges, terminal facilities. By 1914, longer turntables had to be installed at Colonie, Binghamton, Oneonta, Carbondale.

#### **3. Mallets** (1910-1912)

Six Mallet compounds (0-8-8-0; 144,100 pounds of tractive effort) were ordered from ALCo by Loree in 1909. The Mallets replaced the early Consolidations in the pusher pool; seven more Mallets were added to the fleet in 1911-1912.



#### 4. **Pacifics** (1914, passenger locomotives)

Ten Pacifics were ordered from ALCo in 1914; they were used on passenger service to Canada; smoke deflectors added in the 1930s.

#### 5. **E-6 class Consolidations** (1916-1918)

In 1916, *No. 1200* (E-6, 2-8-0, 63,950 pounds of tractive effort) was made by ALCo for the D&H. The following year, 1917, Loree ordered 20 E-6a engines from ALCo. Two firemen were required to get enough coal into the firebox.

#### **1917-1920**

At noon on December 28, 1917 the government took over all transportation systems in America (the U. S. Railroad Administration was created to do so). Railroads given back to their owners on March 1, 1920. When the battered feet of D&H rolling stock found its way back to home rails (1920-21) the D&H had to extensively rebuild 7,800 cars; more than 900 were so badly beaten that they had to be scrapped.

#### 6. **Challenger-type 4-6-6-4 simple Articulateds** (1940)

Twenty, with steamboat-type whistles, were ordered from ALCo for delivery in 1940 (\$178,900 each). This was during the presidency of Joseph H. Nuelle (May 16, 1938—1954). These were the first D&H freight engines with trailing trucks. In 1942, Nuelle ordered from ALCo 15 more for delivery in 1942 at \$213,500 each. The J Class Challengers have been called the most handsome articulated locomotives ever built.

#### 7. **Northerns**

K class 4-8-4, ordered from ALCo; used on *Laurentian* and *Montreal Limited* and on heavy freight trains as well. It was rare for a dual-service engine of this class to work in the Anthracite region.

#### 8. **Dual-service ALCo 4-8-4s, with 75 inch drivers** (beginning in 1943)

#### 9. **Diesel switcher, No. 3000** (1944, the first D&H Diesel)

Built by ALCo in 1944, 1,000 horsepower Diesel switcher: the D&H bought two of them for \$79,039 each. In 1945 ten more Diesel switchers were purchased.

On June 2, 2015, Dave Miller posted the ALCo ad given below on the Delaware and Hudson Facebook page. This ad is from *Railway Age Magazine*, March 19, 1949:

**"ON TIME"  
In Less Time!**

**Delaware and Hudson's New Road Switchers Reduce Running Times—  
Haul Increased Loads Over Tough Grades**

Handling increased tonnages, these new D.&H. road switchers have reduced running times as much as two hours! In multiple, they haul in excess of 800 tons over the 3.12 per-cent branch line Lyon Mountain grade; operate over 128 curves in a single 29-mile stretch of track. Single units haul as much as 2400 tons up the .6 per-cent grade to Gansevoort.

In a single two-day cycle, one of these new diesel-electrics handles assigned freight schedules, transfer and branch line work, train make-up, yard and industrial switching. This job is typical of the kind of work these locomotives must perform over extremely difficult terrain, in all kinds of weather.

The road switcher's raised cab for 360-degree visibility, two-axle trucks for high tractive effort, and 1500-hp turbosupercharged engine combine to make it the locomotive that can haul more ton-and-passenger miles on your road in less time, at less cost.

Many other roads are obtaining results similar to those achieved on the D.&H., not only with the road switcher, but also with the 1500-hp freight, and 2000-hp high-speed passenger locomotives. Switchers from 380- to 1000-hp round out Alco-G.E.'s complete line.

Ask your Alco or G-E representative about the improved operating economies and performance records of these revenue-building diesel-electrics and what they can do for your road.

**Write TO INCREASE YOUR RAILROAD'S EARNING POWER**

**Alco** **GE**

**AMERICAN LOCOMOTIVE and GENERAL ELECTRIC**

**Map of Delaware and Hudson Lines:**  
 MONTREAL  
 PLATTSBURG  
 LYON MT.  
 AUSABLE FORKS  
 WHITEHALL  
 TAHAWUS  
 SARATOGA SPRINGS  
 NORTH CREEK  
 DELANSON  
 BINGHAMTON  
 RUTLAND  
 MECHANICVILLE  
 TROY  
 ALBANY  
 TO WILKES-BARRE  
**ALCO-G.E. LINES**

# 10. Challenger-type Articulateds (1946)

D&H bought from ALCo five of these engines.

# 11. Last Steam Train on the D&H: July 17, 1953

Train No. 10, down from Montreal, on the sleeper, by D&H No. 302 (4-8-4).

## 12. Diesels

The D&H had 179 Diesels in 1953; the highest number of Diesels ever owned by the D&H.

In *Shaughnessy* (p. 466) we read: “The backbone of D&H Dieselization was the Alco road switchers. Early models were RS-2s with the fuel tank under the cab and 1500 horsepower. The 1600-horsepower RS-3s came later and in time all the others were upgraded to that power. In all, 130 of these rather utilitarian but efficient units displaced the grand stable of steam locomotives on the D&H in 1953 and served until the advent of more powerful second generation Diesels in 1964.”

## The First Sixty D&H Locomotives

In the February 1, 1934 issue of *The Delaware and Hudson Railroad Bulletin*, p. 29, there is an article titled "Old Locomotives," in which are given the names and numbers of the 60 locomotives that operated on the Pennsylvania Division of the D&H fifty years ago [1884]. This list was compiled by W. E. Anderson of the Engineering Department in Albany and John R. Atherton, Paymaster of The Hudson Coal Company, Scranton, PA. Here is the introduction of that list of the sixty D&H locomotives in 1884:

**"Old Locomotives/** A list of the names and numbers of the locomotives operating on the Pennsylvania Division fifty years ago compiled according to the best recollection and records available to W. E. Anderson of the Engineering Department in Albany and John R. Atherton, Paymaster of The Hudson Coal Company, Scranton, Penna., will, no doubt, bring up a world of memories in the minds of those who worked on or around these engines at one time or another. In submitting the list for publication in *The Bulletin*, Mr. Anderson remarked that there were probably some additions and corrections that might be made by employees who might read over the names. / With the exception of *Major Sykes*, originally a four-wheel switcher later rebuilt with six drivers, *Lackawanna*, another six-wheel switcher, and *Honesdale*, a four-wheel switcher, the remaining engines were all built for road service. Only four, *Harwood V. Olyphant*, *E. A. Quintard*, *R. Manville*, and *A. H. Vandling*, were of the 4-4-0 or American type, generally used for passenger service. The remainder were all of the Mogul or 2-6-0 type, suitable for use in either passenger or freight trains although chiefly used on the latter. All of these classes are now generally considered obsolete for main-line operation. / The names of the various motive power units were selected by Thomas Dickson, head of the Dickson Locomotive Works where the engines [starting with No. 4 in this list of 60] were built, and also President of The Delaware and Hudson Canal Company from 1869 to 1884. It will be noted that Locomotive No. 2 [in this list] is named the *Harwood V. Olyphant*. This was really the second engine of this number, the first No. 2 having been called *C. P. Wurts* after the fourth man to occupy the position of chief engineer with the Company." (*The Delaware and Hudson Railroad Bulletin*, February 1, 1934, p. 29)

Given below is the list of those sixty engines from that 1934 article, to which we have added any data about or photos of those engines that we have learned in the course of our study. The list, as published in *The Delaware and Hudson Railroad Bulletin* in 1934, is a listing only of the names and numbers of those engines.

Here are some important notes that Anderson/Atherton provide regarding the engines in this list:

--With the exception of *Major Sykes*, originally a four-wheel switcher later rebuilt with six drivers, *Lackawanna*, another six-wheel switcher, and *Honesdale*, a four-wheel switcher, the remaining engines were all built for road service.



--Only four [of the engines in this list of 60], *Harwood V. Olyphant*, *E. A. Quintard*, *R. Manville*, and *A. H. Vandling*, were of the 4-4-0 or American type, generally used for passenger service. The remainder were all of the Mogul or 2-6-0 type, suitable for use in either passenger or freight trains although chiefly used on the latter. All of these classes are now generally considered obsolete for main-line operation.

--The names of the various motive power units were selected by Thomas Dickson, head of the Dickson Locomotive Works where the engines [starting with No. 4 in this list of 60] were built, and also President of The Delaware and Hudson Canal Company from 1869 to 1884.

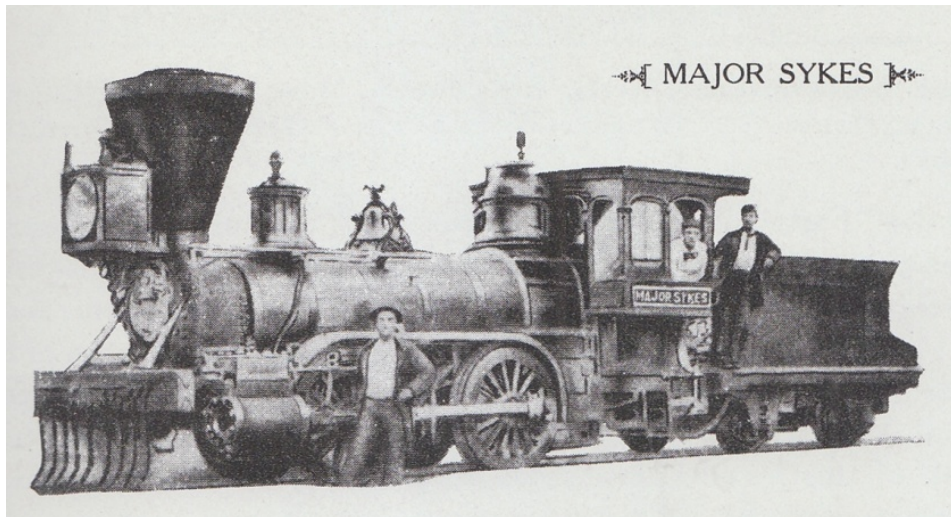
-- Locomotive No. 2 [in this list] is named the *Harwood V. Olyphant*. This was really the second engine of this number, the first No. 2 having been called *C. P. Wurts* after the fourth man to occupy the position of chief engineer with the Company."

Here, then, are the first sixty D&H locomotives in the W. E. Anderson/John R. Atherton list:

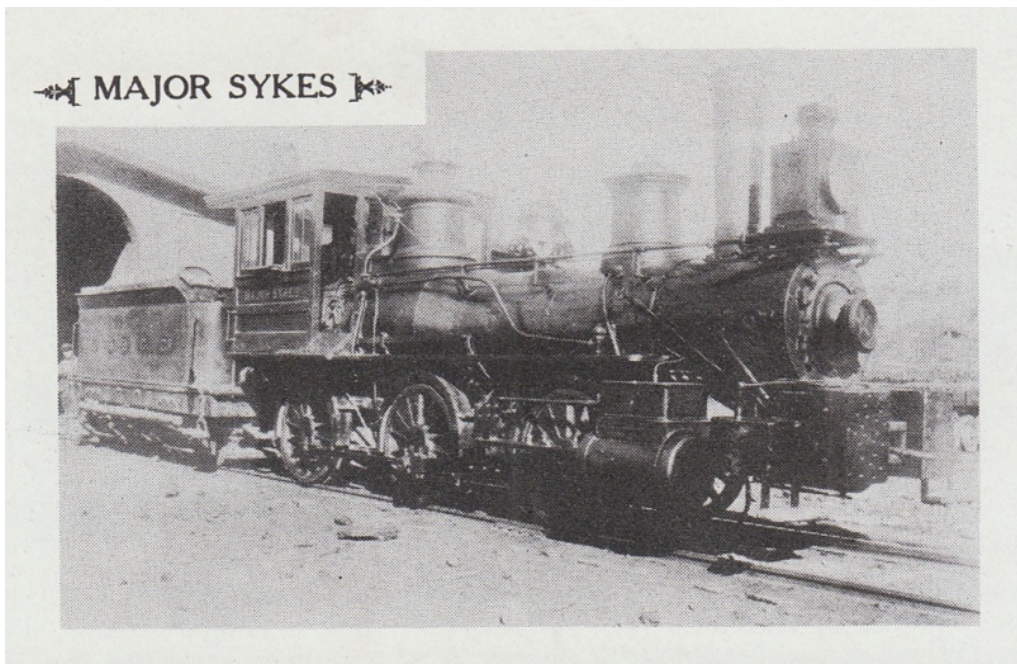
1. **Major Sykes:** D&H Engine No. 1, 0-4-0, Gravity gauge, 4-wheel switcher, later rebuilt with 6 drivers. Built by W. Cook and Company, Scranton; purchased by the D&H in 1860; the Major Sykes could haul only 18 of the 5-ton Gravity cars. The Major Sykes collided with No. 11 in 1871 and was wrecked. It was rebuilt/converted by the D&H in 1872 at the Green Ridge Shop, changing in type from 0-4-0 to 0-6-0, "probably the first conversion."

Origin of the name *Major Sykes*: Possibly because of the family connection, through marriage, between the Wurts family and the Sykes family. Eliza Ann Wurts (1802-1881), a daughter of George and Abigail Petitt Wurts (George was a brother of Maurice and William Wurts, founding fathers of Carbondale) married, in 1831, Lorenzo A. Sykes (1805-1878). Sykes was a civil engineer and ultimately became the chief engineer of the Morris Canal. He worked for the D&H and was appointed, in 1855, general agent/superintendent. He resigned from the D&H in 1866. He died in Orange, NJ, where the family settled in 1875.

Here is a photograph of the original Major Sykes from *Railroadians of America*, New York, Book No. 3, 1941, "Motive Power on the Delaware and Hudson" p. 25:



Here is a photograph (*Railroadians*. . . , p. 39) of the Major Sykes after it was rebuilt/converted by the D&H in 1872 at the Green Ridge Shop, changing in type from 0-4-0 to 0-6-0, "probably the first conversion."



In the biographical portrait of Seth D. Copeland ("Dean of D. & H. Enginemen"), *The Delaware and Hudson Railroad Bulletin*, January 1, 1933, pp. 3, 11, we read: "In 1878 Mr. Copeland left the Gravity for the 'Steam Road,' his first assignment being as brakeman on *Major Sykes*, Locomotive No. 1 at Carbondale. Illustrative of railroad development in the past 50 years, he remarks that the 'Major' could haul only 18 of the 5-ton Gravity cars at a time, whereas one of the 1600-class Mallets would have been able to walk away with the entire rolling stock of about 4,800 cars, owned by the Gravity—if they had held together!" (p. 11)

*D&H No. 1: Major Sykes (rebuilt)*. Photograph from the Clift collection, via Hank Loftus, White Mills, PA. The Major Sykes is shown here at the Union Station in Carbondale.



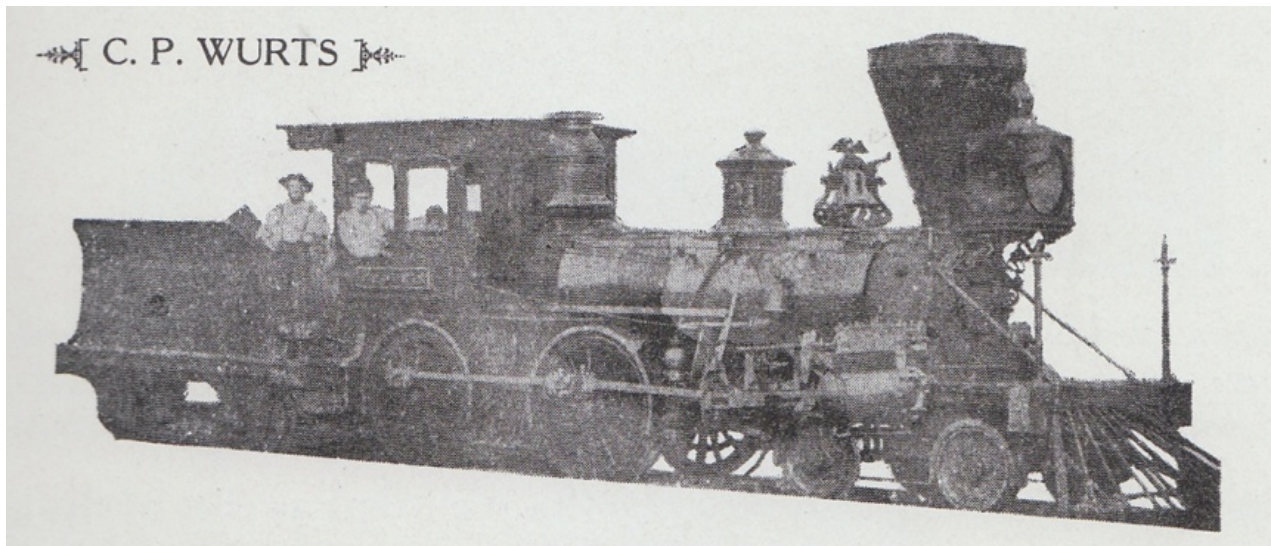
## 2. Harwood V. Olyphant

Note from Anderson/Atherton: "It will be noted that Locomotive No. 2 is named the *Harwood V. Olyphant*. This was really the second engine of this number, the first No. 2 having been called *C. P. Wurts* after the fourth man to occupy the position of chief engineer with the Company."



**C. P. Wurts:** D&H Engine No. 2, 4-4-0, Gravity gauge, built by W. Cook and Company, Scranton; purchased by the D&H in 1860, sold to the Dickson Manufacturing Works in 1874; used on the Valley Road, built for passenger service, though she, too, hauled coal to the foot of No. 23 when necessary.

Photo of C. P. Wurts engine (built by W. Cook and Company, Scranton; purchased by D&H in 1860) from *Railroadians*. . . , p. 25).





*D&H Locomotive No. 2, C. P. Wurts.* Photograph in the collection of the Carbondale D&H Transportation Museum.



3. **Honesdale:** D&H Engine No. 3, 0-4-0, Gravity gauge, 4-wheel switcher, re-named “Terrapin”. Built in 1861 by W. Cooke & Co., Scranton, retired 1899; name changed to “Col. Ellsworth,” soon after that brave officer’s assassination in Alexandria, VA. This engine was next called the “Fire Plume”. As it was too small for the work at Olyphant, it was kept there only a short time, and then did duty on the company’s docks in Honesdale under the name “Honesdale”.

In the December 14, 1861 issue of the *Carbondale Advance* (p. 2), the following article was published:

**“Distinguished Visitor. / New Era.** / Yes, reader! An Iron Horse has actually run into our City [Carbondale], puffing and snorting, and stopped at about the same spot where the first settlers stopped, near the site of the old Log Tavern. / An inkling was had that it would come on Monday last, but our people supposing it would bring the noon passenger train, missed the sight, and

consequently failed to give the stranger a public reception. / As it was however, a crowd of about a thousand, lined the track from the lookout to the depot, and made all ring again with their cheers. / It was an experimental trip and entirely successful under the careful management of Engineer Cool. We noticed C. P. Wurts, esq. the master machinist, and other employees on the Valley Line, on the Engine, showing the travelling community thereby, that no passengers should be sent over the road, until it had been tested properly and they have a confidence in the strength of the various pieces for tressel [of trestle] work on the line.” (*Carbondale Advance*, December 14, 1861, p. 2)

What was this iron horse and how did it get to Carbondale? The Valley Road was not built at this point. There were only two ways that this locomotive could have made an appearance on Level 27 in December 1861: (1) possibly it was brought North from Olyphant via the Gravity system of planes and levels, or (2) possibly it was brought North from Olyphant on a wagon and placed on the rails of Level No. 27 in Carbondale Township, south of the Lookout.

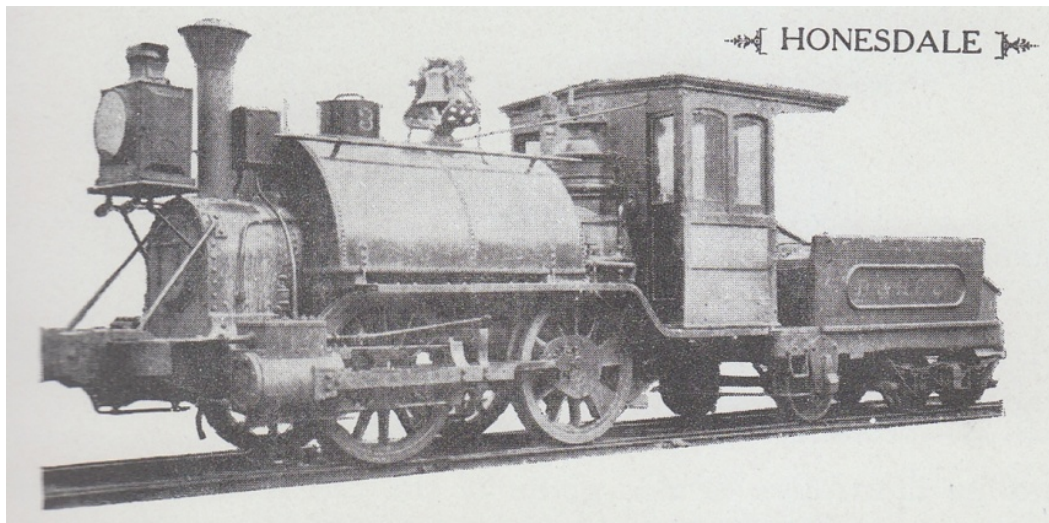
The technical difficulties to be overcome in sending a locomotive north through the Gravity system from Olyphant to Carbondale would surely have argued against such an endeavor. More likely than not, the engine was transported by wagon from Olyphant to Carbondale Township and placed on Level 27 south of the Lookout, and then, watched by about a thousand spectators, run into the City of Carbondale to the Gravity depot on North Main Street as part of a publicity stunt that was carefully orchestrated by C. P. Wurts\* to demonstrate to the traveling public that the trestles on the Gravity passenger line into Carbondale were perfectly safe.

\*The reader will recall (see Volume XIV, pp. 9-10) that it was C. P. Wurts who inaugurated—and vigorously promoted—passenger travel on the Gravity Railroad from Carbondale to the foot of Plane 21 in Archbald in the autumn of 1859, and then “to the new village of Olyphant” in November 1859.

Which Gravity-gauge D&H locomotive was it that made that celebrated run into Carbondale in December 1861? What became of that first iron horse in Carbondale?

We may never know with absolute certainty, but here is one possible explanation: The engine was the *Honesdale*, on its way to Honesdale from Olyphant. The *Honesdale*, we know for certain, was built in 1861 to be used at Olyphant, and it was, in fact, used there, but it was found to be too small for work there, and was kept there for only a short time before being sent to Honesdale for work on the D&H docks. On that December day in 1861, when the first iron horse made its appearance in Carbondale, it is our contention, that the *Honesdale*, having been transported from Olyphant to Carbondale Township on a wagon (on its way to Honesdale) was placed on Level 27 south of the Lookout for the publicity stunt run into Carbondale. Having accomplished the publicity objectives of C. P. Wurts and having proved to any skeptics that the trestles on Level 27 into Carbondale were safe (even for an engine, which would be much heavier than a passenger coach), the *Honesdale* was again placed on a wagon and transported to the D&H docks in Honesdale, where it was used until 1899, when it was retired.

Here is a photo of the *Honesdale* from *Railroadians*. . . , p. 31:



Here is a photo of the *Honesdale* in Honesdale. Special thanks to John V. Buberniak for making this photograph available for the present work.





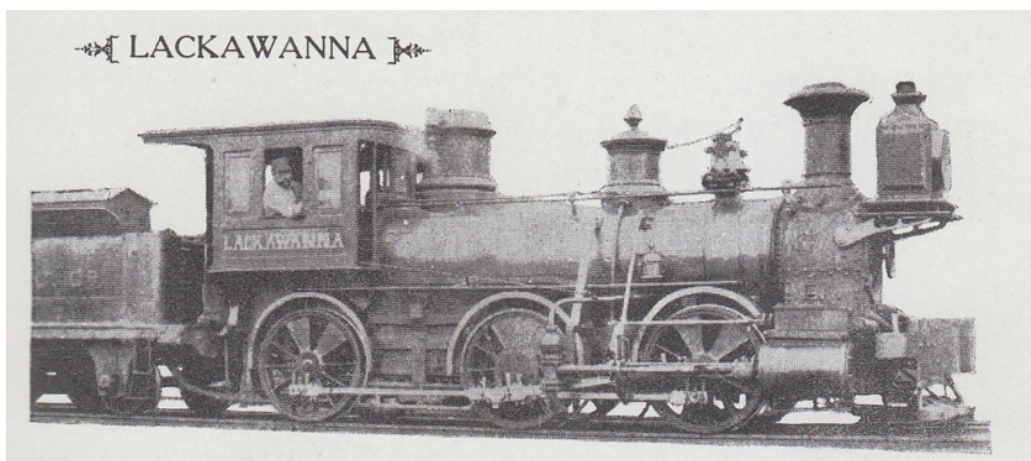
4. **Lackawanna:** D&H Engine No. 4 and Dickson No. 1, 0-6-0, Gravity gauge, 6-wheel switcher; built by the Dickson Manufacturing Company,\* March 31, 1862, serial number 'O,' type 0-6-0, having twelve by eighteen inch cylinders, forty-two inch drivers, fuel being anthracite. Boiler diameter was thirty-six inches. Total weight of engine was forty-two thousand pounds; scrapped 1899; built for use between Olyphant and the mines. She also was sent to Honesdale.

\* "The Dickson Manufacturing Company of Scranton built 1387 wonderful little locomotives from 1862 until the company was purchased by the American Locomotive Co. in 1902." (Shaughnessy, p. 176)

The biographical portrait of Howard Fitch that was published in the September 15, 1927 issue of *The Delaware and Hudson Company Bulletin* contains very interesting information about the *Lackawanna*:

"Coal was unloaded all winter long [at Honesdale] on the 'contract,' as the hillside above the canal basin was called, to be reloaded during the summer and hauled to the docks from whence it was shipped to market in canal boats. / It was during his time [Howard Fitch, late 1860s and early 1870s] that the locomotive *Lackawanna*, No. 4, was taken to Honesdale for use in handling the coal between the storage piles and the transfer pockets in the north end of the yard, a distance of about a half-mile. David McDermott was the engineer. The engine was a hard coal burner and was used only in summer, being taken back to Carbondale each fall before winter weather set in..." When the Gravity Railroad was closed, Howard Fitch was working as the engineer at No. 15, at Prompton, on the light track. (Biographical portrait of Howard Fitch, pp. 279-280, *The Delaware and Hudson Company Bulletin*, September 15, 1927)

Here is a photograph of the *Lackawanna* from *Railroadians*. . . , p. 31:



Here is a photograph of the *Lackawanna* at work at the canal basin in Honesdale. This photograph is in the archives of the Wayne County Historical Society.



#### 5. **S. A. McMullen:**

The *S. A. McMullen* was the second D&H locomotive to be called No. 5. The first engine No. 5 was the *I. N. Seymour*.

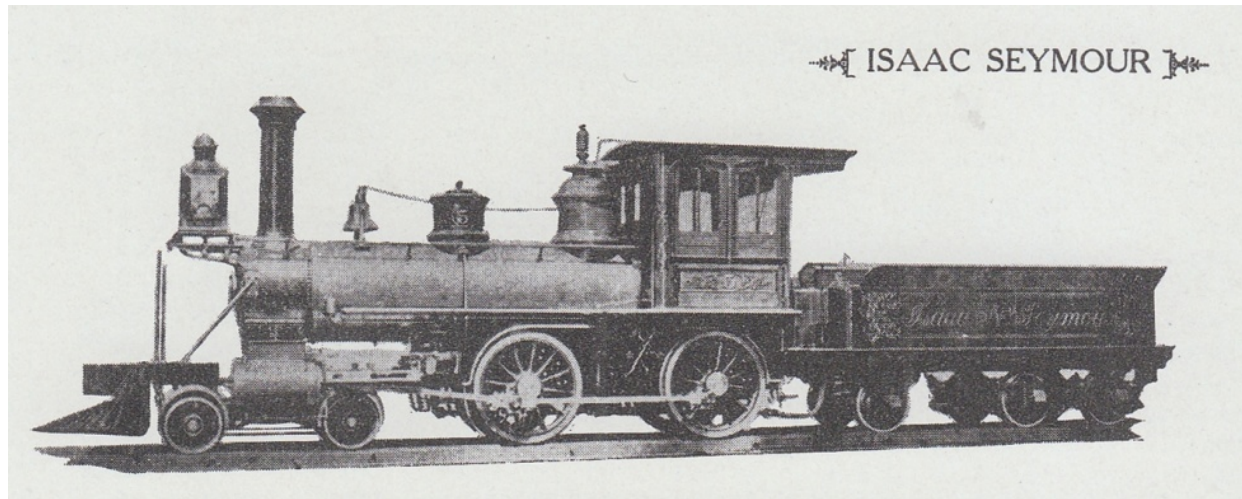
*Isaac N. Seymour*: D&H Engine No. 5, 4-4-0, Gravity gauge. On Sunday, August 4<sup>th</sup>, 1866, this engine, which was built in 1866 by the New Jersey Locomotive and Machine Company, Patterson, NJ., was delivered to the Delaware & Hudson by the Grant Locomotive Works, Paterson, N. J. This engine was used to haul passenger trains but was also used to push coal cars to the foot of Plane 23 on their way to Carbondale. She blew up in the Carbondale roundhouse on March 10, 1879; the engine was then sold to the Dickson Locomotive Works. A locomotive at this time, cost from \$13,000 to \$18,000.

Here is the account from the March 15, 1879 issue (p. 3) of the *Carbondale Advance* about the blowing up of the *I. N. Seymour* on March 10, 1879:

**“Explosion of a Locomotive.** / The Round House in this city was the scene of an unwonted disaster on Monday morning last. / At a little past 6 o’clock the Locomotive ‘I. N. Seymour,’ while standing on the track in its stall, under about its usual head of steam, suddenly exploded, scattering its machinery in all directions, unroofing that portion of the building over the stalls, and tearing down and damaging the brick walls considerably. The shock was felt in most parts of the city. The disaster occurred at a fortunate time. The night workmen had just left, and the day workmen had not yet arrived and taken their positions. The only person in the building was Mr. John Mack who was then oiling the trucks of the engine. He was badly shocked and stunned, but beyond that and some bruises, does not seem to be seriously injured. He was carried to his home, and is reported to be doing well. / The accident is a very uncommon one for our town. The close attention given to the engines, and the excellent order in which they have been kept, make such accidents of rare and unlikely occurrence. In this case we do not learn that any special blame is regarded as attaching to any of the employees. The ‘I. N. Seymour’ was a very old engine, in partial use as a helper, and ‘old age’ is thought by some to account for the accident. Some other Locomotives standing near it were somewhat injured.”



Here is a photograph of the *Isaac N. Seymour* from *Railroadians*. . . , p. 29.



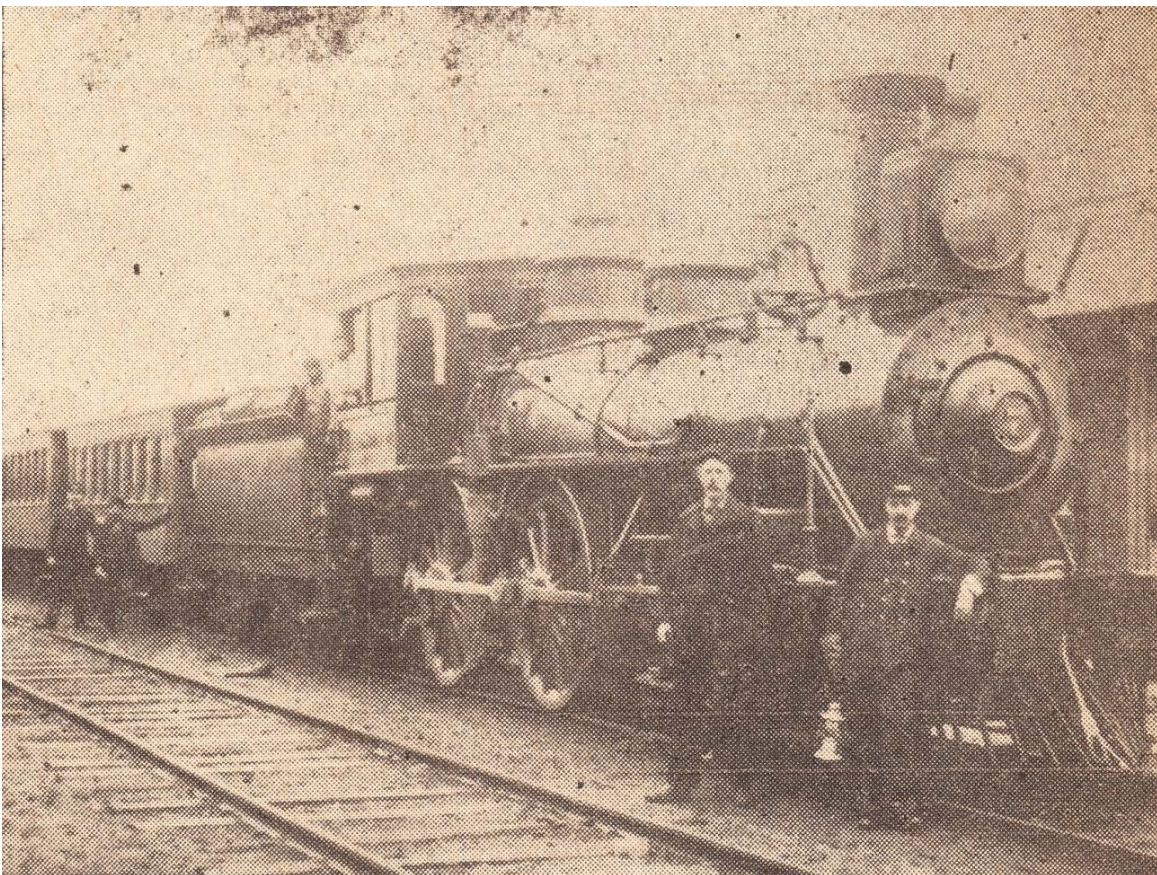
6. **Mill Creek:** D&H Engine No. 6, first standard-gauge engine for the Union Railroad was the Mill Creek; built at Grant Locomotive Works and was brought to the National Crossing, near the Minooka Station, over the tracks of the DL&W on April 2, 1867, and pushed down the line a short distance and her boilers filled with water carried from the river in pails. The fire was started and D. C. Benscoter, acted as fireman, the engineer's name was John Bloom. This engine was stationed at Hudson, and operated between Olyphant and Hudson; it was painted in bright hues. No. 6 was one of three standard-gauge locomotives (Nos. 6, 7, 8) used on the Union Railroad, 1867-1888, to pull Gravity-gauge coal cars between Hudson to Olyphant.

7. **E. A. Quintard:** D&H Engine No. 7 (Dickson No. 4), purchased May 1, 1867, and engineer Bloom and fireman Benscoter (from No. 6 above) were transferred to her, and at that time the *Mill Creek* was sent to Mill Creek to do switching and mine work. No. 4 was stationed a Hudson. It had four drivers, it was a road engine, and operated between Olyphant and Hudson. It was painted in bright hues. This engine (forty-nine inch drivers) was manufactured by the Dickson Manufacturing Company and received by the D. & H. on June 18, 1870. No. 4 was one of three standard-gauge locomotives (Nos. 6, 7, 8) used on the Union Railroad, 1867-1888, to pull Gravity-gauge coal cars between Hudson to Olyphant.

In the biographical Portrait of George Cotton, titled " 'Twas Called *Pumpkin Hollow*," that was published on pp. 99-100 of the April 1, 1932 issue of *The Delaware and Hudson Railroad Bulletin*, we read the following about D&H engines Nos. 6, 7, and 8:

"One of the most attractive Delaware and Hudson engines ever to turn a wheel on the Pennsylvania Division, according to George Cotton, retired Wilkes-Barre roundhouse machinist, was the old No. 7, which was stationed at Hudson back in 1875. There were hand carved grapes on her tender so realistically done that one was tempted to pick them. The engine itself, moreover, was painted in a variety of colors in addition to the conventional black, and the numerous brass bands, handles, bell and flag staffs. The top of the smokestack was bright red, while dashes of gold and blue completed her gaudy dress. / The other two engines then assigned to Hudson [originally called Pumpkin Hollow, later called Mill Creek], Nos. 6 and 8, named *Mill Creek* and *J. J. Albright*, respectively, were also painted in bright hues. Numbers 7 and 8, both of which had four drivers, were known as road engines, and operated between Olyphant and Hudson; No. 9, a six wheeler, was used exclusively on mine runs." (Biographical Portrait of George Cotton, titled " 'Twas Called *Pumpkin Hollow*," was published on pp. 99-100 of the April 1, 1932 issue of the *Delaware and Hudson Railroad Bulletin*.)

Given below is a very interesting newspaper clipping (photo plus caption) in the holdings of the Carbondale D&H Transportation Museum about D&H engine No. 7. Here is the photograph of No. 7 that is given at the head of the clipping:





Here is the fact-filled caption about engine No. 7 that accompanies the photograph as show on the clipping on the preceding page. Let's call this "Clipping No. 1."

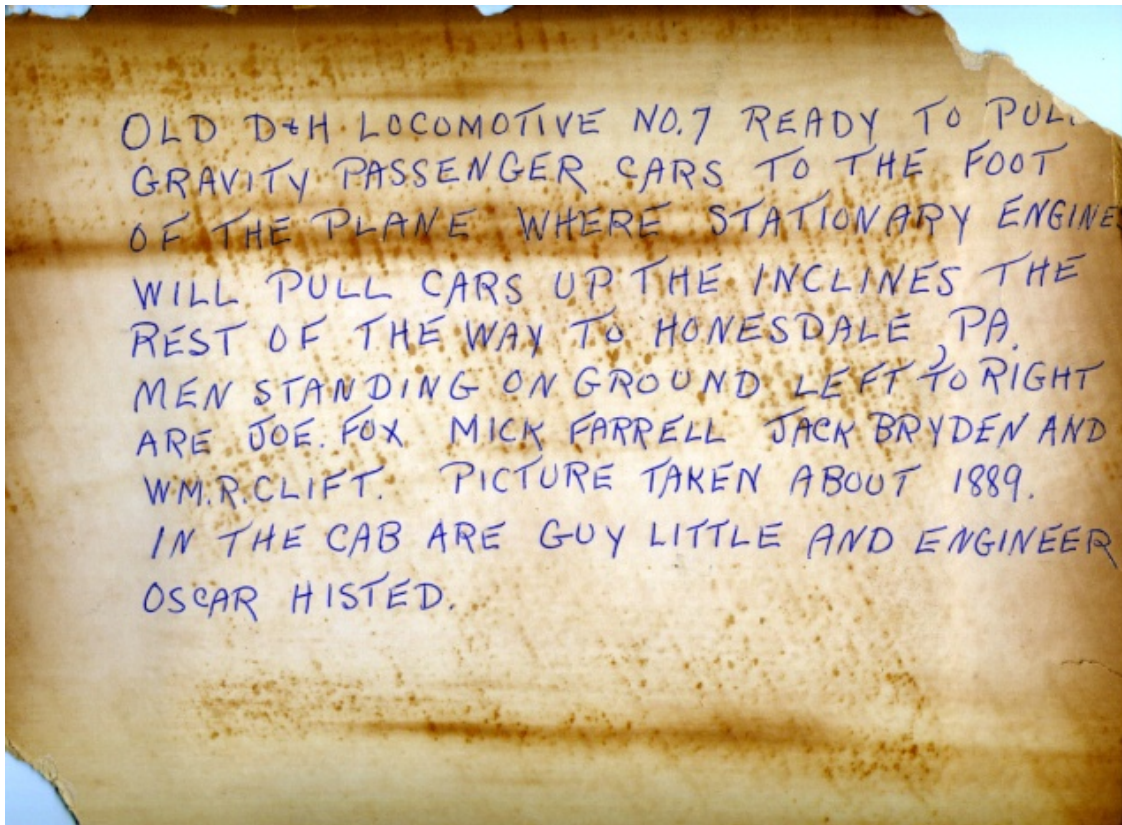
**"CARBONDALE, Oct.30.--**Many souvenirs and old photographs of Gravity days are in possession of Frank Ferrel, North Church street, this city. The one above shows engine No. 7 that hauled the fast train back in 1899. Left to right are: Francis Faatz, Mr. Ferrel, Guy Pattle, Arthur Histed, John Bryden and Bill Clift. Mr. Clift and Mr. Ferrel alone remain out of this group, and both are at present in the employ the D. & H. railroad. / Mr. Ferrel went to work on the D. & H. Canal company in 1867. His first job was to drive a team of horses which towed the canal boats, between Honesdale and Rondout. He was paid \$12 a month and board, and sometimes worked eighteen to twenty hours each day. He worked under Capt. Hughie Todd who commanded a freight carrier, and Capt. Peter Rodine who commanded a coal carrier. He spent two years at this work and in 1879 moved to Carbondale. / During his first three years in Carbondale, Mr. Ferrel attended school, and in 1873 he started to work for the D. & H. railroad. He was employed as a switch-tender at No. 1 on the old Gravity Railroad. During his many years of uninterrupted service he has held many different positions. He worked as a brakeman under Yardmaster Copeland for many years, and at present he is employed as a lamp-tender in the Carbondale yard. / In reminiscing, Mr. Ferrel recounted many hair-raising tales of railroading in the days of the old Gravity, 'When you started down one of those old planes you never knew where you were going to land,' he remarked. 'You just held on and trusted to luck. I can't understand why we didn't have more accidents. But, the most remarkable thing about those days is that we never killed anyone.' / Mr. Ferrel is in possession of an old Gravity lock which was used to lock the cars to the track at night to prevent their theft. It is a very simple affair, but it certainly is foolproof and, as he remarked, the inventor of it 'knew his stuff.' " (undated newspaper clipping in archives of Historical Society)

Shown below is a photograph of D&H No. 7 from the Clift collection, Keens, PA, that was presented to the Carbondale D&H Transportation Museum by Hank Loftus, on October 23, 2014. The original of this photograph is owned by Jim Clift and Maureen Clift. Jim Clift is the grandson of William R. Clift, who worked for the D&H and who is seen in this photograph on the far right. This is the photograph that was reproduced above.



*D&H No. 7*

Here is the back of the photograph in the Clift collection:

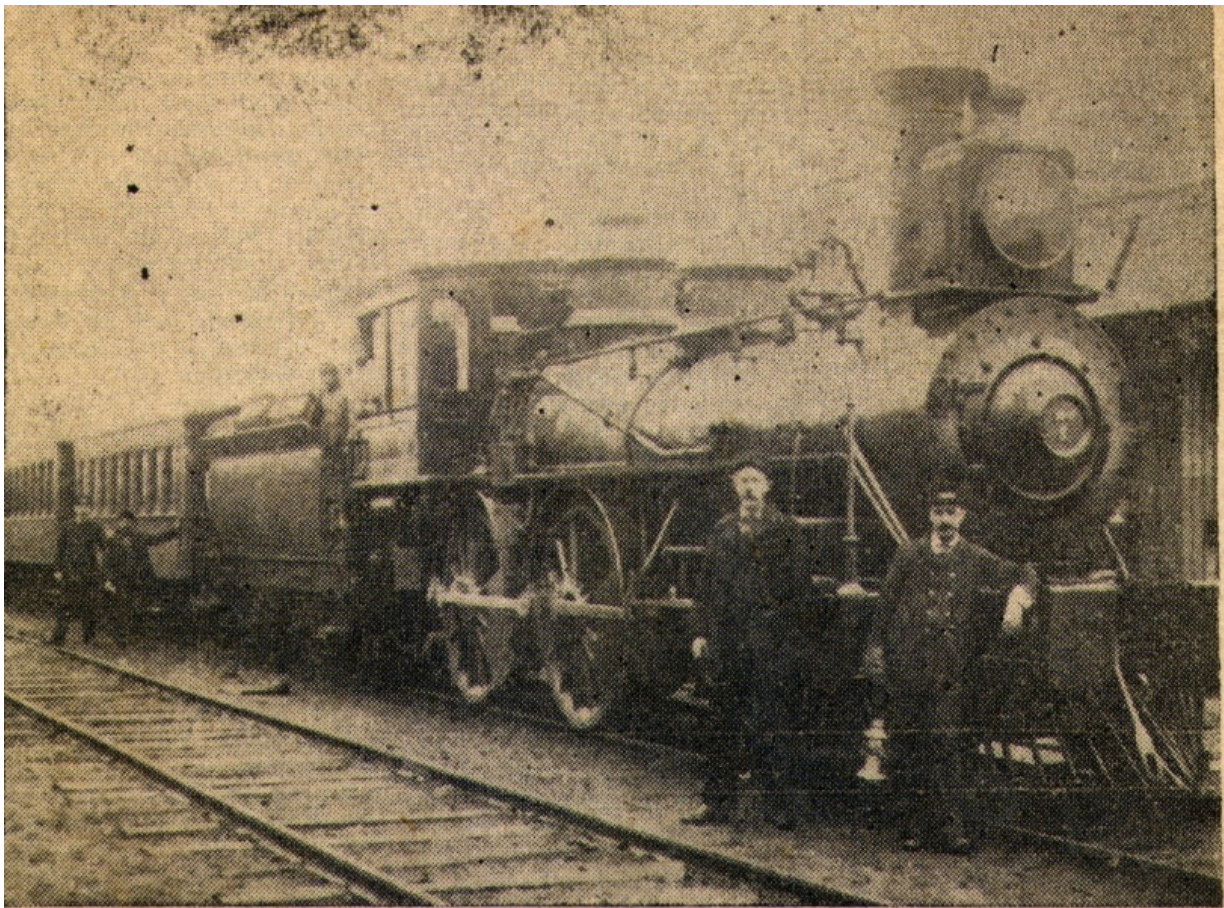


Typescript of the caption shown immediately above:

“Old D&H Locomotive No. 7 ready to pull Gravity passenger cars to the foot of the plane where stationary engines will pull cars up the inclines the rest of the way to Honesdale, Pa. Men standing on ground left to right are Joe Fox Mick Farrell Jack Bryden and Wm. R. Clift. Picture was taken about 1889. In the cab are Guy Little and Engineer Oscar Histed.”



The same photograph was published again in a Carbondale newspaper, at a later date, as shown below. This clipping, let's call it "Clipping No. 2," is also in the archives of the Carbondale Historical Society.



**OLD D&H LOCOMOTIVE NO. 7** stands ready in this photo to pull Gravity Railroad passenger cars on the first leg of their trip to Farview. Stationary engines will pull cars up inclined planes rest of the way. Photo was loaned by John Merrigan, 38 Dart Avenue, veteran D&H railroader. Two men standing at left are Mr. Fox and Mick Farrell. In the cab are Guy Little, trainman, and Oscar Husted, engineman. Standing by engine are Jack Bryden and William Clift. Picture was taken about 1889. (Schella reproduction).

Here is a typescript of the caption on the clipping shown immediately above:

“OLD D&H LOCOMOTIVE NO. 7 stands ready in this photo to pull Gravity Railroad passenger cars on the first leg of their trip to Farview. Stationary engines will pull cars up inclined planes rest of the way. Photo was loaned by John Merrigan, 38 Dart Avenue, veteran D&H railroader. Two men standing at left are Mr. Fox and Mick Farrell. In the cab are Guy Little, trainman, and Oscar Husted, engineman. Standing by engine are Jack Bryden and William Clift. Picture was taken about 1889. (Schella reproduction).”



There are errors in the names on both Clipping No. 1 and Clipping No. 2, as well as in the identifications on the back of the photograph of No. 7 in the Clift collection. For the record, here are the correct names of the six men in three copies of the photograph of D&H engine No. 7 that are shown above:

Left to right: Joe Fox and Frank Farrell , standing on the ground at the left. In the cab, Guy Little, trainman, and Oscar Histed, engineman. John Bryden, and William R. Clift, standing on the ground at the right.

#### **8. J. J. Albright [sic]:**

D&H Engine No. 8, the *J. J. Albright*, was stationed at Hudson. It had four drivers, it was a road engine and operated between Olyphant and Hudson; it was painted in bright hues. This was one of 3 Moguls acquired by the D&H in 1870 (also *Coe F. Young* and *Chas. N. Talbot*). This was one of three standard-gauge locomotives (Nos. 6, 7, 8) used on the Union Railroad, 1867-1888, to pull Gravity-gauge coal cars between Hudson and Olyphant. This engine (forty-nine inch drivers) was manufactured by the Dickson Manufacturing Company and received by the D. & H. on June 18, 1870.

This engine was named after J. J. Albright, who began working for the D&H in 1866. It was Albright who, in 1856, induced Thomas Dickson to remove from Carbondale to Scranton, where he (Dickson) established a machine shop for the manufacture of all kinds of mining machinery. The shop later became the Dickson Manufacturing Company. Albright became the president of the First National Bank of Scranton; also president of the Scranton Gas & Water Co.

J. J. Albright died in January 12, 1888. Here is the notice about his death that was published in *The Journal* on January 12, 1888:

"Mr. J. J. Albright, for many years General Sales Agent of the Del. & Hud. Canal Company, died at his residence in Scranton this morning. He was born in Lancaster county, Sept. 23, 1811." (*The Journal*, January 12, 1888, p. 3)

Here is the photo of Joseph J. Albright by Schurch that is presented facing page 164 in *Clark*:



**9. Sandy Turnbull:**

This was D&H Engine No. 9: a six wheeler, that was used exclusively on mine runs.

**10. R. Manville:**

“Engineer Sam Cobb is running Engine 10 during the illness of Mr. Benscoter, who is confined to the house with an attack of pneumonia.” (*Carbondale Leader*, March 9, 1883, p. 3)

**11. James Dickson:**

James Dickson was the father of D&H President, Thomas Dickson.

## 12. Coe F. Young:

This engine (forty-nine inch drivers) was manufactured by the Dickson Manufacturing Company and received by the D. & H. on May 2, 1870.

On January 1, 1873, Coe F. Young's job title was changed from General Superintendent of the D&H to General Manager of the D&H:

**“The D. & H. Company.** / The Delaware and Hudson Canal Company have made the following changes, to go into effect on the 1<sup>st</sup> day of January, 1873: / 1<sup>st</sup>, the title of C. F. Young, Esq. General Superintendent, will be changed to that of General Manager. . *Rondout Freeman.*” (*Advance*, January 4, 1873, p. 3)

On June 17, 1875, Engineer Daniel Pace was probably fatally injured when the *Coe F. Young* ran off the track owing to a misplaced switch near Pittston:

"Daniel Pace, engineer of No. 12 on the Del. & Hud. R. R., was probably fatally injured on Thursday morning. The engine ran off the track owing to a misplaced switch, near Pittston, and tipped over. Pace was wedged in between the cab and the boiler for about two hours, and seriously bruised and burned." (*Carbondale Advance*, June 19, 1875, p. 3)

In early January 1888, Coe F. Young and his wife departed from Honesdale for Bermuda, where they would spend the winter:

“The Honesdale *Citizen* says Coe F. Young and wife started last week for the Bermudas to spend the winter.” (*The Journal*, January 12, 1888, p. 3)

## 13. Charles N. Talbot:

George Olyphant's middle name was Talbot? Any connection here?

This engine (49 inch drivers) was manufactured by the Dickson Manufacturing Company and received by the D. & H. on June 10, 1870.

## 14. Plymouth:

## 15. Willie Olyphant:

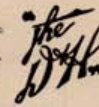
**16. George L. Dickson:**

**17. J. B. Van Bergen:**

Milo Gardner, Carbondale, started to work for the D&H on April 10, 1876, and worked for the D&H for 48 years and 21 days. On April 23, 1882, he was promoted to the position of engineer. He 'drew' the *J. B. Van Bergen* and was assigned to pusher service on the hill north of Carbondale. At that time, at the age of 23, he was the youngest man at the throttle of a Pennsylvania division locomotive. Here is the biographical portrait of Milo Gardner that was published in the February 15, 1925 issue (pp. 3-4, 13) of *The Delaware and Hudson Company Bulletin*.



The  
DELAWARE AND HUDSON COMPANY  
BULLETIN



Vol. 5

Albany, N. Y., February 15, 1925

No. 4

## Realized Boyhood's Dreams

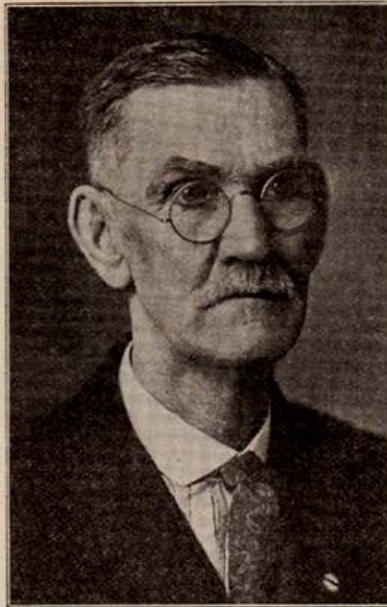
*Veteran Employee's Ambitions to be a Locomotive Engineer Were Gratified by  
Forty-two Years of Service at the Throttle*

**D**REAMS—day dreams that stir our ambitions, if you please—sometimes come true though they may appear, at their origin, to be but fanciful air castles. So it was with MILO GARDNER of No. 80 Cemetery Street, Carbondale, Pa., retired locomotive engineer, who enjoys a record of forty-eight years and twenty-one days of continuous service with the Company. He dreamed, as a boy, and has lived to enjoy the full fruition of what he thus saw in the future. He was pensioned on May 1, last.

From points of vantage in the door-yard that surrounded his grandfather's home near Factoryville, Pa., when but a lad, eight or nine years old, he was wont to watch the little trains of the Delaware, Lackawanna and Western as they wended their way up the hillside from Scranton. At times, he became virtually riveted to the ground upon which he stood, by the strange fascination of the scene being enacted before his eyes, and would dream of the day when he, too, might live the life of a railroad man, particularly that of a locomotive engineer. Stronger, indeed, became this grip upon him, when at night he could trace into the far distance the movements of the trains by the trail of light kept bright by the sparks that poured forth from the stacks of the little wood burners as they trudged along with their loads of freight or human beings. Anyone who

in childhood dreamed thusly, can readily appreciate the influence which guided his course henceforth.

He was born at Factoryville, April 19, 1859, and was the eldest of three children of Jeremiah and Matilda Gardner. His father died in the service of his country two weeks after he had enlisted in the Union army; and two or three years later the mother, still a young woman, died also. Thus, at the age of eight, he faced the world an orphan.



MILO GARDNER

For four years he lived with his grandfather and then was admitted to a school which had been established at Harford, Susquebanna county, for the care and education of soldiers' orphans. There he remained until he was sixteen years old, meanwhile attaining the rank of captain in one of the school's cadet companies. Such were his experiences during those years, that he still recounts them with considerable fervor and enthusiasm. None of the time, however, did his fascination for the railroad wane. Unable as he

was to see the trains as they passed in the distance, he nevertheless could hear them and the noises they set up were ever music to his ears.

Not long after his graduation, he became acquainted with Amos Carroll, then assistant superintendent for the Company at Green Ridge, Pa. He made application through him for a



## *The Delaware and Hudson Company Bulletin*

position on the road, with the result that at 7 o'clock "sharp," as he tells it, on the morning of April 10, 1876, he started work as a track laborer under Sterle Ross. His associates in the gang were all of Irish or Welch descent.

Train service continued to have its lure, however, and three or four months later he received permission to go "braking" for Otto Myers, on the Van Storch breaker run. That work covered the movement of coal from the breaker in the upper end of the yard at Green Ridge to the foot of "G," as the last plane of the old gravity system, at Olyphant, was designated. Dean Hayden, as he recalls, was the engineer.

Fully satisfied with train work, he continued on the mine run until during a dull period when a brakeman at Mill Creek (Hudson) relinquished his position, and this he accepted. From then on, or until the miners' strike of 1877, he worked with "Skip" Shafer. The wild scenes connected with that disturbance, how the miners swept down through the valley armed with guns and clubs and other defensive weapons, threatening, as they passed, all whom they thought to be opposed to their cause—these incidents he remembers as well as if they had happened only yesterday. Their train was quickly surrounded with the intention of "cutting off" the engine, but upon the promise that its fire would be "pulled" upon arrival at Mill Creek no trouble ensued and the mob passed on its way.

His locomotive service dates from October 1, 1876. That was the day on which he first left the yards at Green Ridge as a fireman, making the trip with "Tom" Williams. His real apprenticeship, however, was served under "Dad" (Truman) Utley, who later left the road during the Manville regime and is now a neighbor in Cemetery Street, Carbondale. The locomotive which they had at that time was the George F. Wilbur, later known as the No. 20.

One experience of his earlier days on the road which has since caused him much amusement, was a verbal clash he had with "Bill" Halstead, as he speaks of him, then president of the Delaware, Lackawanna and Western. It was at a crossover where the tracks from the Cliff Works, at Scranton, where many of the earlier locomotives used on the Valley road, as the lower end of the Pennsylvania division then was known, were built, intersected those of the Lackawanna. Halstead had often been a visitor at his grandfather's home at Factoryville when he was living there as a boy, but he failed to recognize his identity until some time after the controversy. Later, desiring to make a trip to Elmira, he called at Halstead's office and interviewed him personally. Halstead eyed him closely, and then, apparently having recognized and, scribble! the necessary authority upon a scrap of paper and handed it to him without comment.

For some time he fired the old No. 10 for Miles Biesecker, hauling the renowned "Mike" Maloney. Biesecker was inclined to be spiteful at times. On one of their first trips together, his stubbornness caused them to become stalled on the main line between Stevens Point and Starucca. The engine did not steam well when running at slow speed and Miles knew this well, but on that particular occasion he would travel no faster than about four or five miles an hour with the result that they were out of steam when they reached Melrose, a station long since abandoned.

When promoted to the position of engineer on April 23, 1882, he had just passed his twenty-third birthday and became the youngest man at the throttle of a Pennsylvania division locomotive at that time. The reason for this was that he had stepped in among men much older than he at a time when promotions were slow. When they were set up, however, the exigencies of the service likewise brought him a promotion. He "drew" the J. B. Van Bergan, No. 17, and was assigned to pusher service on the hill north of Carbondale.

The first day out on the road was one full of excitement, one which he frequently recalls to-day. His experiences were the more thrilling, perhaps, because of the fact that for the first time full responsibility for the performance of the engine rested upon his judgment. Next, he was assigned to "Coal 5," between Carbondale and Nineveh, pulling George Farrell, later a conductor on Nos. 1 and 2, but who left the road many years ago.

His promotion to passenger service came with the death of Engineer Bescoter, and for about twenty-three years he ran on trains Nos. 504 and 509, and 513 and 514, serving the greater part of that time with Conductor Henry Johnson.

He likes to tell of the great consideration engineers and firemen of his day had for the equipment which they handled and of how those who failed to keep their locomotives looking spick and span were forthwith regarded as slouches. On more than one occasion he made the run to Nineveh and back, as a fireman, without once sitting down. When he was not busy before the yawning doors of the firebox, he was out on the running boards or elsewhere cleaning and polishing the brass trimmings that then adorned all locomotives. When a storm threatened, it was the practice to protect these trappings by going over them with greasy waste.

Much of his success he attributes to punctuality and to the fact that he was a steady worker. It was not unusual for him to work a hundred days or even more without once absenting himself. During his earlier service, he was obliged to make many of the running repairs necessary

(Concluded on Page 13)



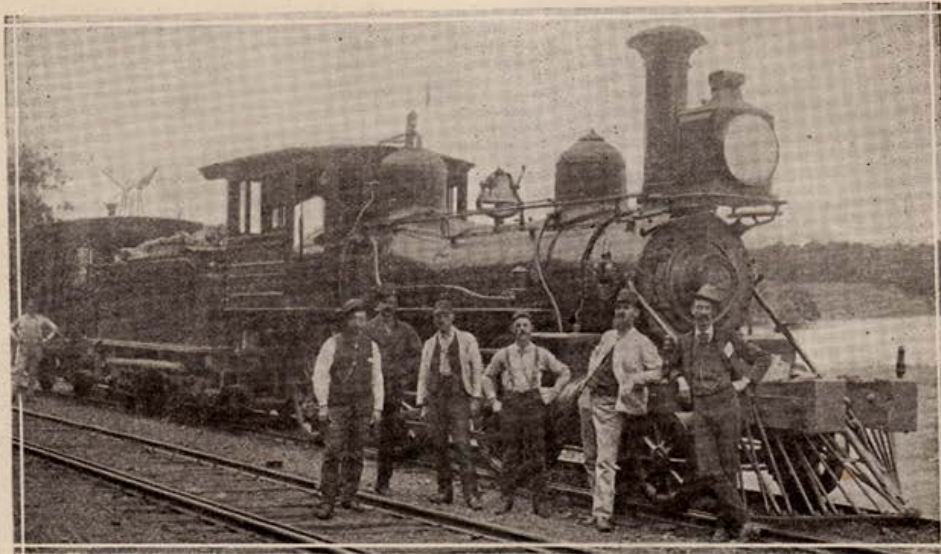
*Realized Boyhood's Dreams*

(Continued from Page 4)

to keep his engine in good working condition. This work often included the washing of boilers and similar details.

One of the strange experiences of his career came when he arrived at Jefferson Junction one winter's day, with a train of twenty-five cars. The sun was out bright and warm and everything looked fine for a quick trip home. Before leaving, however, he was ordered to set off ten cars, no explanation being forthcoming. This done, a start was made, all members of the crew meanwhile pondering over the unexplained order. But

On the return trip, the train, for the moment, got out of control. About a mile ahead, down the grade, was a high wooden trestle which menaced his course, but fortunately he managed to bring the train to a stop about fifty feet from this structure. The remainder of the trip, after the trestle had been crossed, was equally as exciting for again the train ran wild. So fast did it travel that the fireman declared the ends of the ties resembled somewhat a long, endless plank. Everything, however, was once more in his favor. No trains were in sight as he approached the "D. L." crossover, and he rode safely onto the main.



MR. GARDNER AND CREW OF THE "FIFTY-TWO"

In group—(left to right) Jack Hogan, brakeman; next, unknown; Johnnie Cornish, brakeman; Tommy Cornish, fireman; Mr. Gardner, engineer; and, "Spence" Courtright, conductor. (Taken at Yatesville. Note "Third Rail" for accommodation of gravity cars.)

an answer was not far off for as they approached Starrucca, they encountered a snow storm which blocked the road for more than twenty-four hours.

The road out of Carbondale at that time was cut through a virgin forest. From Morse's at the upper end of the yard to Forest City and thence on the east side of the road to Stillwater, heavy hemlock timber lined the right-of-way.

In the way of real excitement, he probably got his share on a little stretch of track then known as the Winton branch, which led across the Delaware, Lackawanna and Western tracks at Winton and to a breaker at Marshwood. He had gone to the breaker with a train of ten empties and with orders to bring back as many loads.

In Carbondale, he is regarded as a citizen worthy of the confidence and respect of all who have occasion to meet him. He served as a member of the city's special counsel for two years and from time to time on various committees.

Among his former associates on the road, he enjoys a host of friends. It is not unusual to hear them rate him as "one of the best engineers the Company ever had." Quiet of manner, pleasant, frank in his opinion, appreciative of the rights of others, he is indeed a person whom it is a pleasure to know.

On January 1, 1883, he was married to Miss Harriet Curtis of Wayne county and to them four children were born, one of whom has since died. He is a member of the Baptist church.

## 18. Pierce Butler:

Pierce Butler was the Master Machinist for the D&H. Here is a news article about the funeral of his wife in August 1874:

“The funeral services over the remains of Mrs. Pierce Butler, of Carbondale, who died at Ocean Grove, N. J., on Friday last, were held at the residence of Mr. S. B. Haley, of this borough [Honesdale], on Monday morning, after which the body was taken to Carbondale for interment, accompanied by over two hundred residents of that city [Carbondale], who came over in a special train provided for the purpose by the Del. & Hud. C. Co. Mr. Butler is Master Machinist at Carbondale.—*Honesdale Citizen*.” (*Carbondale Advance*, August 22, 1874, p. 3)

The engineman of No. 18 in 1880 was Samuel S. Cobb, senior, reputed to be one of the best passenger conductors in the Pennsylvania Division.

On March 26, 1879, Samuel G. Cobb started work for the D&H as a wiper in the Carbondale roundhouse. "In those days," we read in his biographical portrait ("Engineman Taught By His Father") in the July 1, 1930 issue (pp. 195-196, 204) of *The Delaware and Hudson Railroad Bulletin*, "the enginemen took great pride in their engines, each of which had both a name and number. Mr. Cobb still has a list of all the locomotives at Carbondale in 1880, 37 in number, together with the engine's name and the engineman of each [emphasis added]. Number 1 was the famous *Major Sykes*; Number 2, the *H. V. Olyphant*; others were the *Lackawanna*, *Mill Creek*, *R. Manville*, etc. In that year his father had Number 18, the *Pierce Butler*. / The engine crews made all of their light repairs during their rest periods, including the polishing and shining necessary to keep an engine with more brass than iron in first class condition. The fireman had to clean the flues and wash the boiler. On Sundays he reported at the roundhouse to assist the engineer at his work of polishing brass. Mr. Cobb's father took great pride in his engine and would not permit anyone else to work on it unless he was on hand to watch them. Every engineman boasted that his was the nicest looking engine; more than once blows supplemented words in deciding which of two engines was the neater. Some of them had beautiful scenery painted on the tanks and headlights." (pp. 196, 204)

## 19. A. M. Atkinson:

## 20. George F. Wilbur:

## 21. A. H. Vandling:

“Engine 21 ran into some gravity coal cars this week near Dickson. Her front was damaged a little.” (*Carbondale Leader*, March 9, 1883, p. 3)

A. H. Vandling was named Superintendent of the Coal Department of the D&H C. Co. in late February 1874:

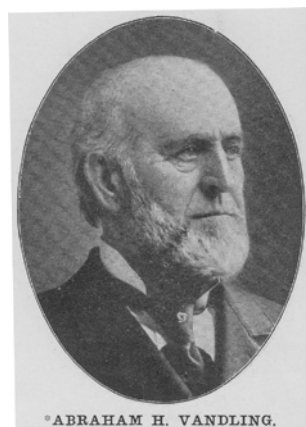
**“Change of Superintendent.** / E. W. Weston, Supt of the Coal Dept. of the Del. & Hud. C. Co. has resigned his position, and is succeeded by Mr. Vandling of Ulster Co. He has for many years held important positions in the Hudson River section. / Mr. Weston, we learn, continues in charge of the Land Department, surface, for the Company.” (*Carbondale Advance*, February 28, 1874, p. 3)

In the following month, March 1874, Vandling was placed in charge of all of the mines of the D&H. In the *Carbondale Advance* of March 28, 1874, we read:

**“Del. & Hud. C. Co.** / The following appointments by the Directors of the Del. & Hud. are announced: / Mr. A. H. Vandling is to have entire charge of all the mines of the company with his headquarters at Scranton; Mr. Peter Philips is have charge of the company’s dock, vessels, etc., at Kingston, N. Y.; Mr. Alfred Ousterhoudt is to take Mr. Vandling’s place in the office; Mr. Henry Snyder takes Ousterhoudt’s late position as book keeper in the office there; Mr. Charles Basten is promoted to the position of permit clerk. . . .” (*Carbondale Advance*, March 28, 1874, p. 3)

Some biographical facts about A. H. Vandling, from Stoddard’s *Prominent Men*:

"Abraham H. Vandling / Born Moresburg, Pa., Nov. 13, 1824--June 12, 1901. Educated Public Schools. Married Jeanette du Bois, Feb. 10, 1858. General Supt. Delaware and Hudson Mines twenty years. Dir. in Bank at Kingston, Pa. Member of First Presby. Church. Supt. Delaware and Hudson Canal. Employed with Penn'a Coal Co. under General Green during law suit with Delaware and Hudson Co." (Photograph p. 27, and biographical sketch, p. vii, in Dwight J. Stoddard's *Prominent Men*, 1906)



This is the photograph of Vandling from page 27 of Stoddard's *Prominent Men*.



Here is a photograph taken by the author on October 11, 2009 of the Vandling mausoleum in Dunmore Cemetery, wherein the earthly remains of A. H. Vandling are interred:



22. \_\_\_\_\_ **Fuller:**

Engine No. 22, the *Mark L. Fuller*. Jasper Gritman served as fireman on the Fuller in 1873. In his biographical portrait in *The Delaware and Hudson Company Bulletin*, we read:

". . . After working as a trainman [formerly called a brakeman], he [Jasper Gritman] decided that the work of a fireman appealed to him more, so he joined their ranks in 1873. His first run, he well remembers. It was on old engine 22, the 'Fuller,' with Engineman Bob Simmeral, on a run between Wilkes-Barre and Carbondale. The 'Fuller' has long since been disposed of, yet there will always be a spot reserved in his heart in which he cherishes the memory of his happy days firing her. He remained on that run for six years." (Biographical portrait of Jasper Gritman, pp. 275-276, September 15, 1928 issue of *The Delaware and Hudson Company Bulletin*)

About the *Mark L. Fuller* engine, we read the following in the biographical portrait of Seth V. Colvin ("They Had No Caboose") that is published in the October 1, 1932 issue of *The Delaware and Hudson Company Bulletin*. pp. 259-260:

"On July 1, 1880, Mr. Colvin was promoted to the rank of conductor and was placed in charge of locomotive 22, the *Mark L. Fuller*, a 20-ton engine with her water supply in tanks placed along the sides of the boiler instead of in a tender. This engine was used to do mine switching at Plymouth and to move cars between that point and Hudson. On that short run the crew ran over four different single track railroads: The Delaware and Hudson, Lehigh Valley, Jersey Central, and Lackawanna; today [1932] the Wilkes-Barre Connecting Railroad, owned and operated jointly by the Pennsylvania and Delaware and Hudson, links Plymouth and Hudson."

Here is the formal studio photograph of Mr. Colvin that is given at the head of his biographical portrait in *The Delaware and Hudson Company Bulletin*:



SETH V. COLVIN

In addition to the formal studio photograph of Mr. Colvin at the head of the article, there are two additional photographs in the biographical portrait of the man.

In the first, we see Mr. Colvin and four of his colleagues “fifty years ago” (1882):

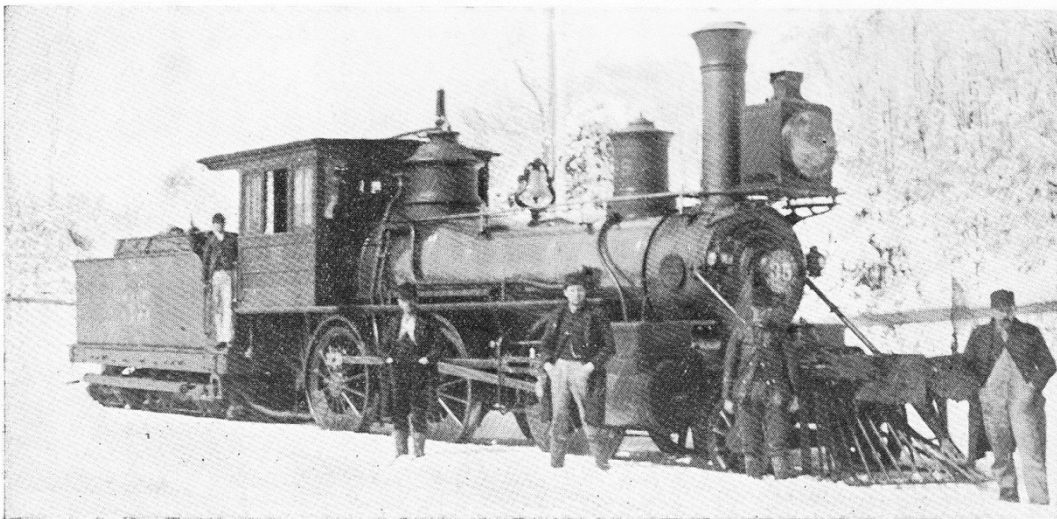
### Fifty Years Ago



*This Pennsylvania Division Crew included John Mathers, John Gohan, Thomas Winn and Seth Colvin.*

In the second (“Mine Run Out of ‘Mill Creek,’ at Laflin in 1885”), we see Mr. Colvin and four others, all standing in front of Engine No. 35:

### Mine Run Out of “Mill Creek,” at Laflin in 1885



*Left to right: Daniel Arnold, Robert Carter, “Mike” Doherty, Frank Clark and Mr. Colvin.*



### **23. James P. Dickson:**

One of the engines assigned to mine runs originating at Hudson in 1886 was the James P. Dickson. About that engine and others and about the railroad career of Frank S. Clark, we read the following in the biographical sketch of Frank S. Clark that was published in the September 1, 1936 issue of *The Delaware and Hudson Railroad Bulletin*, pp. 131-132:

“In 1886 MR. CLARK asked Yard Master Milot Shiffer, at Mill Creek, now Hudson, for a position as brakeman, and he was transferred to the Transportation Department just after the new steam locomotive railroad between that point and Wilkes-Barre was placed in operation. / That fall he became a locomotive fireman, working on the various mine runs which then originated at Hudson. Two of the engines then assigned to that service were the *James P. Dickson* and the *J. J. Albright* [probable mistake in article; No. 27 was the *J. J. Astor*; the *J. J. Albright* was No. 8], Nos. 23 and 27, which were kept in the four-stall roundhouse, situated on the approximate site of the present car shops. About 1900, these locomotives were sent to Wilkes-Barre, the old Hudson roundhouse was abandoned and eventually torn down. / In 1895 MR CLARK saw his first service as an extra engineer and in 1901 he was given a steady job on a mine run out of Wilkes-Barre. For a time, too, he was in passenger service, pulling the train which left Wilkes-Barre at 5:25 A. M. with passengers, mail, and express for Carbondale, and arriving at Wilkes-Barre on the return trip at 9:35 A.M. In later years he was frequently called upon to handle passenger trains between Wilkes-Barre, Scranton, Carbondale, and Nineveh, although he much preferred daylight mine- or Hudson-Yatesville pusher runs, which permitted him to spend every night at home. / For the past 35years MR. and MRS. CLARK, who have been married 54 years, have lived in their present home at 116 South Main Street, Parsons, now a part of Wilkes-Barre. They have six children: JOHN, a Delaware and Hudson trainman; Albert, an employee of The Hudson Coal Company. . . (p. 132)

### **24. John T. Kensett:**

"A new culm-burning locomotive, the No. 66, was received at the D. & H. shops here last night. Engine No. 24, which has been remodeled into a culm-burner at the Dickson Mfg. Co.'s works at Scranton, arrived on Saturday." (*The Journal*, February 3, 1887, p. 3)

### **25. R. L. Kennedy:**

Robert Lenox Kennedy was a member of the D&H Board of Managers in 1873.

“Geo. Roemmelmeyer, engineer of No. 25, will leave for Albany, N. Y. on Monday for a short visit.” (*Carbondale Leader*, March 9, 1883, p. 3)

## **26. Colonel Cannon:**

Legrand B. Cannon was a member of the D&H Board of Managers in 1873.

In the biographical portrait of Willard Newton that was published in the January 1, 1936 issue of *The Delaware and Hudson Railroad Bulletin*, pp. 3-4, we read: “A few months later, in the fall of 1885, he [Willard Newton] was called to work on the steam railroad as trainman at Plymouth. For some time he worked on various mine runs out of Plymouth with engine No. 26, named *Colonel Cannon*.”

Engine No. 26 and Engine No. 29 were both stationed at Plymouth Junction in 1884. In the biographical portrait of Peter E. Becker (retired from the D&H an engineer on August 1, 1936; born on September 20, 1863, at Ghetto, a small mining town near Hazleton) that was published in the May 1, 1937 *Delaware and Hudson Railroad Bulletin* and reprinted in the May 2009 issue of the *Bridge Line Historical Society Bulletin*, p. 43, we read, from the reprint, the following:

“He [Peter Becker] first went to school at the age of four, the term lasting only from September 1 to January 31. In Plymouth, where the family moved the following year, there was a three-month term in the winter, and another in the summer. / As soon as he was eight years old he spent the balance of the year as a breaker boy, mule driver, or ventilating door tender in the mines. At that time, the Delaware and Hudson was represented at Plymouth Junction by Willard Hickok, who bore the titles of yardmaster, dispatcher, and southern sales agent. Beginning in 1884, Mr. Hickok frequently called Mr. Becker to work as a brakeman on the railroad when one of the regular men laid off. There were two locomotives stationed there then, Nos. 26 and 29, named *Colonel Cannon* and *James R. Taylor*, respectively, both of which were used to haul coal from Plymouth to Mill Creek, now Hudson, running over Delaware and Hudson tracks to South Wilkes-Barre, via the Central Railroad of New Jersey to Parsons, thence to Mill Creek over our own [D&H] line. / In 1886, Mr. Becker became a regular brakeman under Conductor Sherman D. Brown, frequently serving in the latter’s place or as extra fireman. The next year [1887] he became Engineer Dennis Arnold’s regular fireman on Locomotive No. 25, the *R. L. Kennedy*, later firing for Engineer John Hallett on the Wilkes-Barre—Green Ridge way freight. . .”

## **27. J. J. Astor:**

John Jacob Astor was a member of the D&H Board of Managers in 1873.

## **28. J. M. Halstead:**

James M. Halstead was a member of the D&H Board of Managers in 1873.

29. **James R. Taylor:**

James B. Taylor was a member of the D&H Board of Managers in 1873.

30. **W. J. Hoppin:**

W. J. Hoppin was a member of the D&H Board of Managers in 1873

31. **H. A. Fonda:**

32. **E. J. Woolsey:**

33. **A. A. Low:**

A man who was said to be Henry Blair was struck and killed by D&H engine No. 33, on December 27, 1887, on the Jefferson Branch. In the *Carbondale Leader* of December 28, 1887, we read the following about Henry Blair the man, his work career, and his accidental death:

**"DEATH ON THE RAILS. / A Man who Drove Barnum's Forty-Horse Chariot. / Henry Blair, an Eccentric and Roaming Character, Struck Last Evening by a D. & H. Engine and Instantly Killed Near the Rock Cut--His History.** / About 6 o'clock last evening as D. & H. engine No. 33, Ed. Atkinson, engineer, was nearing No. 8 bridge on the Carbondale [Jefferson] branch a man was seen walking in the track. The whistle was blown and the man stepped out from between the rails without looking back, and continued on his journey. Engineer Atkinson made no attempt to stop, but as the locomotive neared the individual he again stepped upon the ties apparently unconscious of the approaching train or the shrieking danger signal. It was too late to stop and no one was near to pull the man off, and he was struck by the ponderous iron horse. The train was brought to a stand still and the lifeless remains were placed upon the caboose and brought to this city. / The corpse was recognized as that of Henry Blair who will be remembered by many of the older residents of this city as identified with the early history of the place. He was the oldest son of Luther G. Blair, familiarly known as 'The Major' who delighted the youth years ago by his martial bearing when he beat the drum on special occasions such as occurred on the 17 of March and the old fashioned fourth of July that Carbondale was famous for fifty years ago. The man whose earthly existence was closed so suddenly last night spent his boyhood days in this neighborhood, part of the time at Bethany, then the county seat of Wayne County. In early life he was given to traveling, inheriting the spirit of adventure from his father,

who when a mere boy did service as drummer in the war of 1812. / Away back in the 'forties' Henry was a popular stage driver in the service of Alexander Kenner, and no man on the line between Wilkes-Barre and Honesdale was a more expert handler of the ribbons and whip. It is said that he was selected by the famous Barnum to drive the celebrated forty-horse chariot. Later Mr. Blair went to Michigan where he was for a time successfully engaged in the lumber business, and for some years little was known of him. A few years ago he returned and was for a time employed by Patrick McGarry of Fell township, but recently he worked wherever he could find such employment as he was able to perform. His wife is living in the family of John Peck near Simpson, and Henry was in the habit of spending part of his time at this house. Recently he had been engaged in the lumber district near Forest City and was probably on his way to the mills when he was killed. / The remains will be buried at Prompton where his father, an active man over ninety years of age, resides. The other members of the family who are best known here are Rev. Hiram G. Blair, of Kirkwood, N. Y. and Mrs. Rowena True, of Montrose. (*Carbondale Leader*, December 28, 1887, p. 4)

As it turns out, the man who was identified as Henry Blair, in the above accident report, was not Henry Blair. Here is the account of the accident described immediately above that was published in *The Journal*, December 29, 1887, p. 3:

**"Fatal Accident.** / An unknown man was killed by being run over by a D. & H. locomotive near bridge No. 10 on the Jefferson branch, just above this city, about six o'clock on Tuesday evening. He was walking along the track, and the engineer blew the whistle, when he stepped to the side of the track. Just as the locomotive reached him he stepped so near or on the track that he was struck by the locomotive, one foot run over and the leg badly lacerated. He died almost instantly either from the shock or internal injuries. / The body was brought to this city and taken to the undertaking establishment of John Kase, where it was prepared for burial. It was supposed to be that of Henry Blair, who was employed in the lumber woods near Forest city, but Mr. Blair's wife viewed the remains this morning, and said it was not her husband. His brother, Rev. H. G. Blair, of Kirkwood, N. Y., was also telegraphed to yesterday and arrived here this morning. He says the body is not that of his brother, though of somewhat similar build [emphasis added]. The countenance is not the same, and Henry Blair had lost a forefinger, and had an anchor in India ink on the arm, neither of which marks are found on the body of the dead man. / Coroner Burnett viewed the body and decided that an inquest was unnecessary, and as no one identified the body it was buried in Maplewood cemetery by the poor director of Fell township at two o'clock this afternoon. / A card of Dr. W. St. Clair Gibbs being found in the pocket, the Dr. was telephoned to and stated that the man was a tramp who called at his office suffering from eye trouble, and that he directed him to go to his brother in Scranton who would get him in the hospital [sic]." (*The Journal*, December 29, 1887, p. 3)

### 34. Normanskill:

Here is a photograph of D&H Engine No. 34 (Consolidated E-4) that was posted in the Delaware and Hudson railroad *Facebook* group on January 4, 2016 by Steve Brown. The engine is shown in this photograph on the turntable of a roundhouse.



*D&H Engine No. 34*

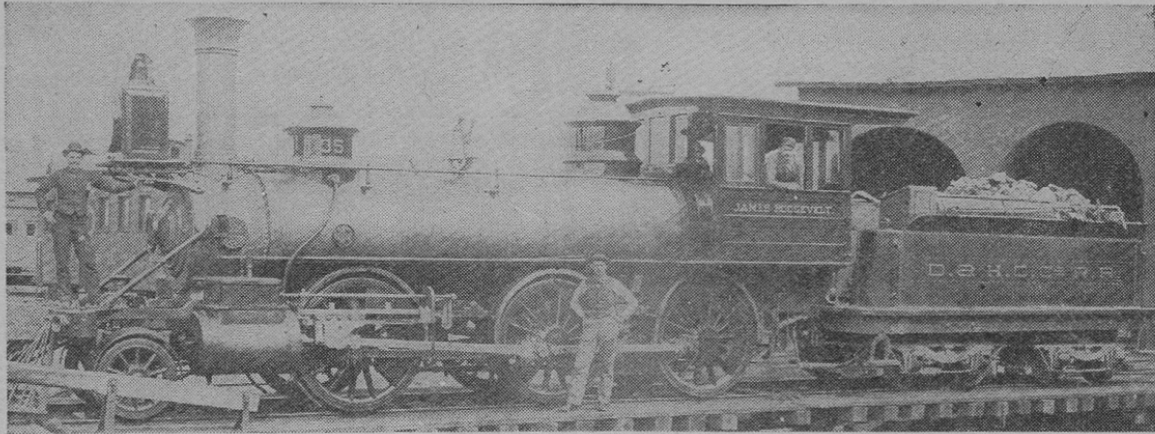
### 35. James Roosevelt:

The *James Roosevelt* blew up at Cork Lane, Pittston, PA, on March 4, 1887.

A photograph of the *James Roosevelt* on the turntable at Green Ridge was published in *The Delaware and Hudson Company Bulletin*, February 15, 1928, p. 62. Here is that photograph and the caption that was provided for the photo in *The Delaware and Hudson Company Bulletin*:



## The "James Roosevelt"



"**The 'James Roosevelt'** / Through the courtesy of George H. Kellow, a conductor on a work train at Green Ridge, Pa., we are privileged to present to our readers a photograph of the 'James Roosevelt,' an early locomotive on the Pennsylvania division, and its crew, which was taken on the turntable at Green Ridge, on July 15, 1885 [emphasis added]. Mr. Kellow, then a brakeman, is to be seen on the pilot deck; Ben Myers, another brakeman, now retired and living at Clarks Summit, Pa., is next; and Edward Goodman, the fireman, who died about two years ago [about 1926] at Farview, Pa., is in the cab window. / This locomotive was referred to in an account of the career of George L. Westcott, a retired engineer, which was published in *The [Delaware and Hudson Company] Bulletin* of May 15, 1925, as having blown up at Cork Lane, Pittston, Pa., on March 4, 1887. Mr. Westcott was hurled from the cab and his fireman, 'Cort' Colvin, was blown from the cab into the tender, but neither suffered serious injury. William Schultz was the head brakeman; Dave Cobb, who died about twenty years ago, the middle man; and Mr. Kellow, the flagman. None of these three men were affected by the explosion, however." (*The Delaware and Hudson Company Bulletin*, February 15, 1928, p. 62)

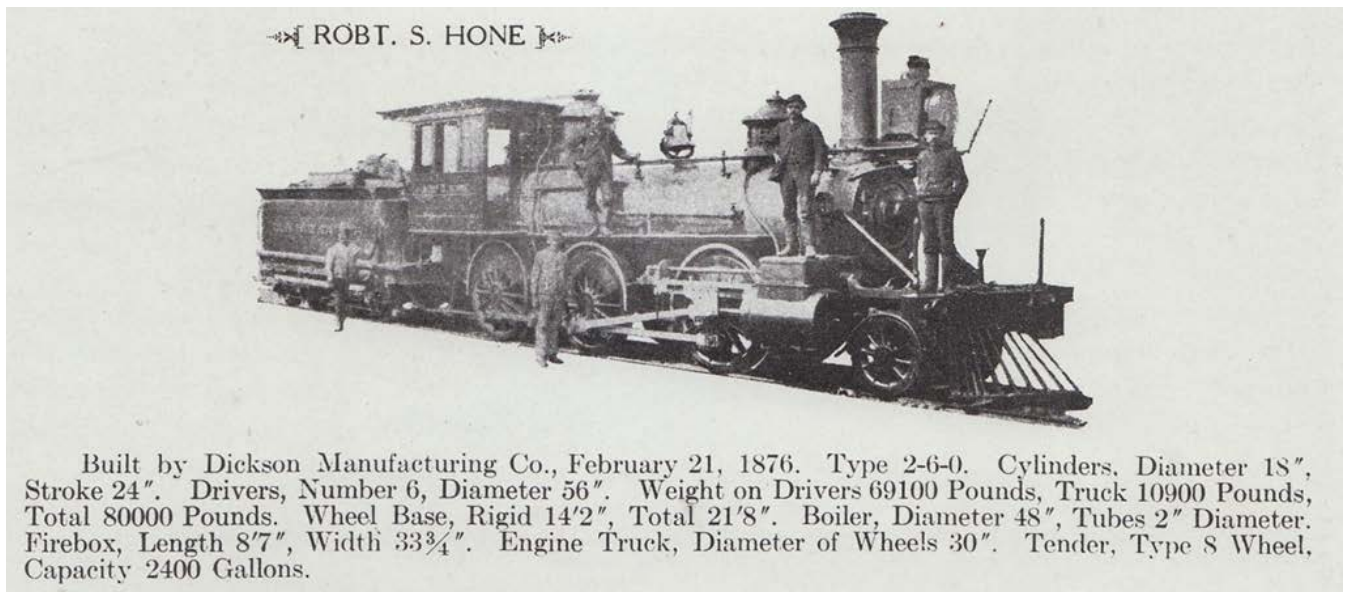
James Roosevelt was a member of the D&H Board of Managers in 1876 and 1877. He is not to be confused with James A. Roosevelt who, in 1891, was a major stockholder in the D&H. In addition to his many civic and community affiliations, James A. Roosevelt was one of the founding fathers of the Metropolitan Opera in New York, which opened on October 22, 1883 with a performance of Charles Gounod's *Faust*. (Earlier that same year, on May 24<sup>th</sup>, John A. Roebling's Brooklyn Bridge opened.) Three of the other founding fathers of the Met were

William H. Vanderbilt, Robert Goelet, and Ogden Goelet. Here is the photograph of James A. Roosevelt that is given on page 17 of *The MET One Hundred Years of Grand Opera* by Martin Mayer (New York: Simon and Schuster, 1983):

James A. Roosevelt

**36. Robert S. Hone:**

Photo from *Railroadians*. . . , p. 40:



Text from *Railroadians*. . . , p. 39:

Illustration is also given of the "Robt. S. Hone," number "36," built by the Dickson Manufacturing Co., February 21, 1876, which had:—Eighteen by twenty-four inch cylinders; fifty-six inch drivers; weight on drivers sixty-nine thousand one hundred pounds, on engine truck ten thousand nine hundred pounds, total weight eighty thousand pounds. Wheel base, rigid, was fourteen feet two inches, and total twenty-one feet eight inches. Boiler was forty-eight inches in diameter, having two inch flues. Firebox was eight feet seven inches long and thirty-three and three-quarter inches wide. Tender was of the eight wheel type with a water capacity of twenty-four hundred gallons.

### 37. John B. Smith:

In the biographical portrait of Samuel G. Cobb in the July 1, 1930 issue of *The Delaware and Hudson Railroad Bulletin*, pp. 195-96, 204-05, we read:

". . . Mr. Cobb still [in 1930] has a list of all the locomotives at Carbondale in 1880, 37 in number, together with the engine's name and the engineman of each."

In that same portrait, we also read: "The engine crews made all of their light repairs during their rest periods, including the polishing and shining necessary to keep an engine with more brass than iron in first class condition. The fireman had to clean the flues and wash the boiler. On Sundays he reported at the roundhouse to assist the engineer at his work of polishing brass. Mr. Cobb's father took great pride in his engine and would not permit anyone else to work on it unless he was on hand to watch them. Every engineman boasted that his was the nicest looking engine; more than once blows supplemented words in deciding which of two engines was the neater. Some of them had beautiful scenery painted on the tanks and headlights. . . . At the time of the death of Thomas Dixon, President of The Delaware and Hudson Company, while Sam was firing for his father [the father, Samuel S. Cobb fired for nine and one-half years the *E. A. Quintard*, No. 7] they were called to pull the special carrying officials of the company to the funeral. On the return trip Superintendent R. Manville told them to give the visitors a good ride from Carbondale to Nineveh. When they reached Nineveh, Superintendent of Motive Power Blackall remarked that that had been the fastest and smoothest ride he had ever had. Superintendent C. D. Hammond of the Susquehanna Division came forward to tell him that he would enjoy an even better ride from Nineveh to Albany. Mr. Blackall later remarked that he had not changed his mind despite the Susquehanna Division engineman's best efforts." In that same biographical portrait we read: ". . . 'If a single man's head moved or a newspaper swayed when the brakes were applied, I was called down for making a poor stop. That is the way I learned to run an engine, firing nine and one-half years for my father,' says Samuel G. Cobb, retired Pennsylvania Division engineman. . . ."

### 38. Charles Parrish:

**39. Rob Roy:**

**40. T. F. Torrey:**

**41. Rattler:**

**42. Rover:**

**43. S. H. Dotterer:**

“The big mogul engine 43, *S. H. Dotterer*, which has pulled the Nineveh freight for the past year was turned over to the Saratoga Division of D. & H. road Wednesday of this week. The engine was built for the B. H. T. & W. R. R. but was, for some reason taken off their hands by the D. & H. Engine 43 was by far the best engine the Penn Div. owned, and the reason of her removal can only be explained on the supposition that the northern roads of this Company are in greater need of motive power than the Penn Div. Engineer Bingham also feels sad at parting with his big engine, but hopes the fates may have a better one in store for him. Engine 36 is temporarily running the freight.” (*Carbondale Leader*, February 23, 1883, p. 2)

**44. Vulcan:**

**45. Mars:**

**46. Hercules:**

**47. Neptune:**

**48. Mercury:**

**49. Chingachgook:**



**50. H. M. Olmsted:**

**51. Huron:**

“The new engine on the D. & H., ‘Huron,’ No. 51, running on Conductor Silvernell’s train between here and Nineveh is a fine piece of machinery. It is manned by engineer Bryden and fireman Schenzer of this city. They are well pleased with their new charge.” (*Carbondale Leader*, July 25, 1884, p. 2)

The conductor on the *Huron* when it was added to the D&H fleet in 1884, G. F. Silvernell, resigned from the D&H on August 31, 1887, having worked for the D&H since 1872. In the *Carbondale Leader* of September 1, 1887, we read:

**“Conductor Silvernell Resigns.** / G. F. Silvernell, conductor on the 3 o’clock passenger and way freight of the Delaware and Hudson C. Co., between this city and Nineveh, yesterday resigned after four years of faithful service in that position. Mr. Silvernell has been in the employ of the D. & H. Company since 1872 and his resignation at this time will be surprising news to his numerous friends hereabouts. He has a lucrative position awaiting him near Lake Marear, Green county, Wisconsin, at which place he has relatives living.” (*Carbondale Leader*, September 1, 1887, p. 1)

**52. Magua:**

**53. Oneida:**

**54. Mohawk:**

**55. Wyandotte:**

**56. Lauder:**

**57. Leader:**

58. Melrose:

59. Selkirk:

60. Greenlaw:

**Organizational Note:** Here ends the list of the first sixty D&H locomotives in the W. E. Anderson/John R. Atherton list.

Hereafter, we will have a look at a wide variety of D&H locomotives which are interesting and/or historically important. This is not intended, be it known, to be a complete list of all D&H locomotives.

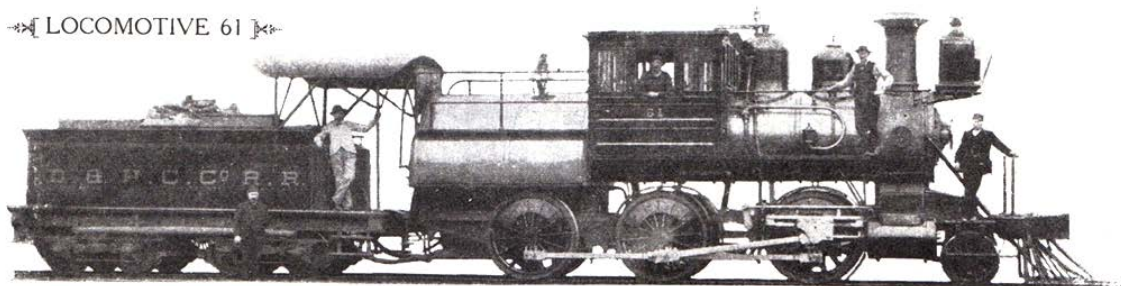
**No. 61:**

--made by Dickson Manufacturing Co., 1886, type 2-6-0

No. 61 was the first culm burner (using pea or buckwheat coal; older engines used "lump" coal) on the D&H. In *Railroadians*. . . (p. 45) we read:

This is also notable as the period of purchase of the first culm type locomotive, same being built by the Dickson Manufacturing Co., in 1886, type 2-6-0. This locomotive had eighteen by twenty-four inch cylinders; drivers, fifty-five and three-quarter inches in diameter; weight, on drivers eighty-three thousand pounds, total weight ninety-five thousand pounds; firebox, eight feet six inches long; tubes, two inches in diameter; wheel base, fourteen feet two inches rigid and twenty-one feet eight inches total; engine truck had thirty inch wheels, tender was the eight wheel type with a water capacity of twenty-four hundred gallons. This locomotive carried one hundred forty pounds of steam and had a tractive power of sixteen thousand five hundred ninety pounds. Photographic illustration is given of this locomotive.

~>[ LOCOMOTIVE 61 ]<~



The First Culm Burner on the Road

**No. 62:**

"A new passenger engine, No. 62, was received here on Monday for use on the Pennsylvania Division of the Delaware and Hudson railroad. Another, No. 63, is expected to arrive here on Saturday. Both were built by the Dickson Mfg. Co. of Scranton." (*The Journal*, July 29, 1886, p. 3)

**No. 63:**

"A new passenger engine, No. 62, was received here on Monday for use on the Pennsylvania Division of the Delaware and Hudson railroad. Another, No. 63, is expected to arrive here on Saturday. Both were built by the Dickson Mfg. Co. of Scranton." (*The Journal*, July 29, 1886, p. 3)

**No. 64:**

"D. & H. Locomotive No. 64 exploded at the round house on Sunday night, blowing out the front end of the boiler. Fortunately no one was hurt." (*The Journal*, May 3, 1888, p. 3)

**No. 66:**

"A new culm-burning locomotive, the No. 66, was received at the D. & H. shops here last night. Engine No. 24, which has been remodeled into a culm-burner at the Dickson Mfg. Co.'s works at Scranton, arrived on Saturday." (*The Journal*, February 3, 1887, p. 3)

**No. 69:**

--made by the Dickson Manufacturing Company, 1887

"A new passenger engine, which is intended to run between this city and Wilkes-Barre, arrived at the D. & H. shops here on Monday night. It is No. 69, and was built by the Dickson Mfg. Co., Scranton." (*The Journal*, March 24, 1887, p. 3)

**No. 74:**

--culm burner, made by the Dickson Manufacturing Company, 1888; to be used on the Carbondale to Nineveh run

"The Dickson Company has just turned out two handsome culm burners for the D. & H. Co.-- Nos. 74 and 75. The former engine will be used between Carbondale and Nineveh, and the latter between Wilkes-Barre and Carbondale. They are said to be much superior to any of the engines now in use.--*Scranton Times*" (*The Journal*, February 9, 1888, p. 3)

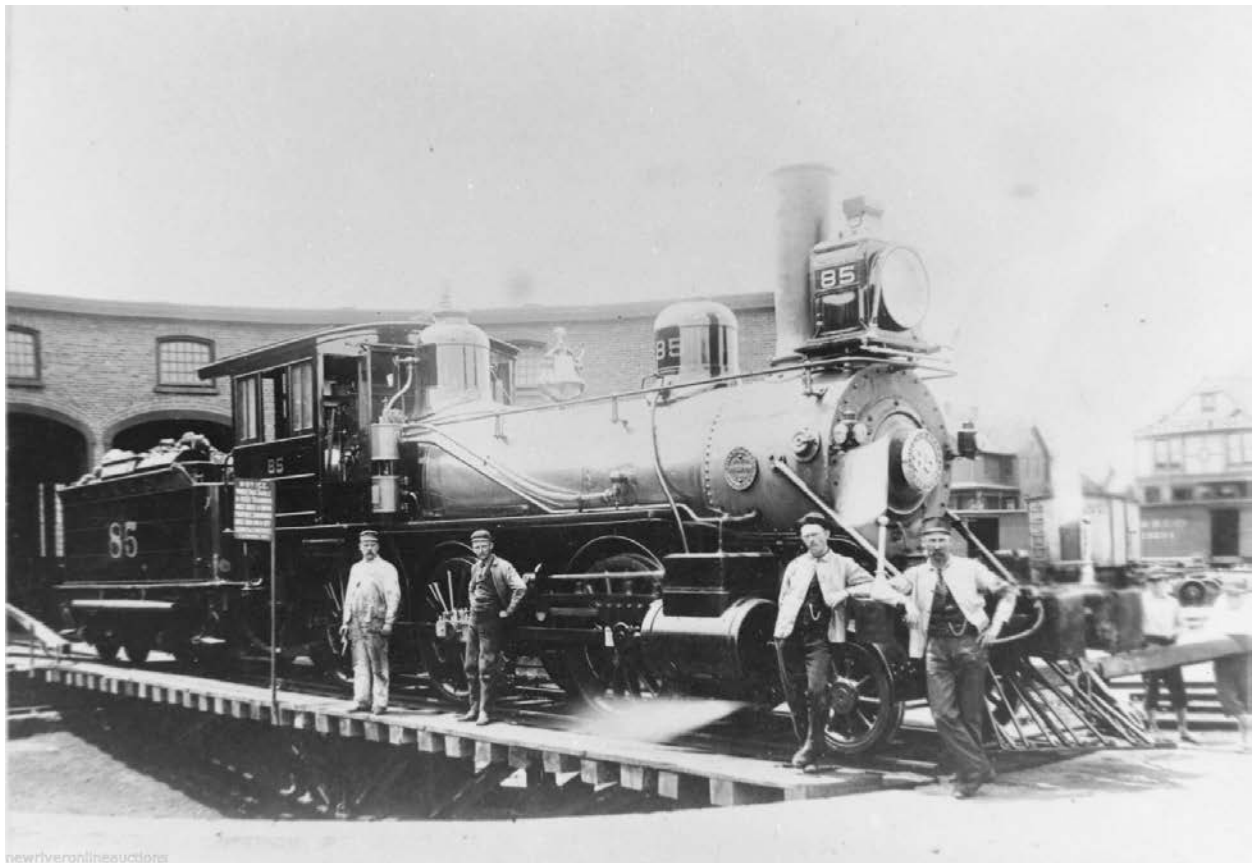
**No. 75:**

--culm burner, made by the Dickson Manufacturing Company, 1888; to be used on the Carbondale to Wilkes-Barre run

"The Dickson Company has just turned out two handsome culm burners for the D. & H. Co.-- Nos. 74 and 75. The former engine will be used between Carbondale and Nineveh, and the latter between Wilkes-Barre and Carbondale. They are said to be much superior to any of the engines now in use.--*Scranton Times*" (*The Journal*, February 9, 1888, p. 3)



**No. 85:**



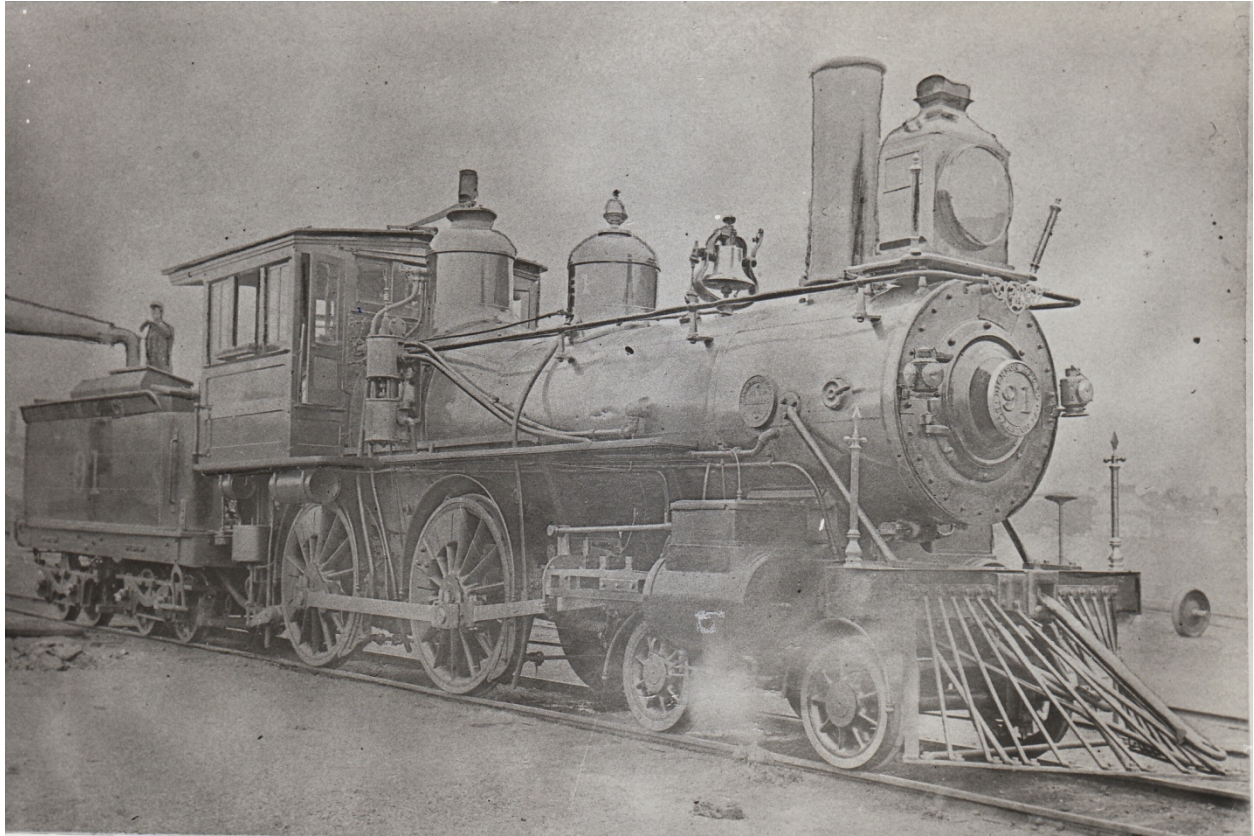
*D&H No. 85*

This photograph was made available by John V. Buberniak for the present work on November 20, 2015. This engine was built at Schenectady in 1899, rebuilt at Colonie in December 1924, and scrapped in November 1945.

Which turntable /roundhouse is shown in this photograph?

**No. 91:**

Photograph on No. 91 in the collection of the Carbondale Historical Society.



*D&H No. 91*

**No. 134:**

Photograph of No. 134 in the Clift collection, Keens, PA., copy made available to the Carbondale Historical Society on October 23, 2014 by Hank Loftus, White Mills, PA.



*D&H No. 134*



**No. 152:**

--switcher engine, ALCo, 2-8-0, 1907

Photograph, dated "Aug 6, 1942," in the collection of the Carbondale D&H Transportation Museum. The names of the men shown in this photograph are very familiar Carbondale names, which suggest that this photograph may have been taken in the Carbondale yard. Our thanks to John V. Buberniak for his assistance on July 17, 2016 with background information on this engine.



*D&H ALCo Switcher No. 152*

Standing: Moran, Dockerty, Mitchell, Durham, Foxe, Brownell, Gill, Hunt, Bennett, Gerrity, Rosler, Zelinski, Lewis. Kneeling: Healey, Brennan, Kohut, Boylan, Nelson. On the engine: Engineer, Farrell, Fireman McDonald.



Here is a photograph of No. 152 from the Collection of Darren E. Hadley.

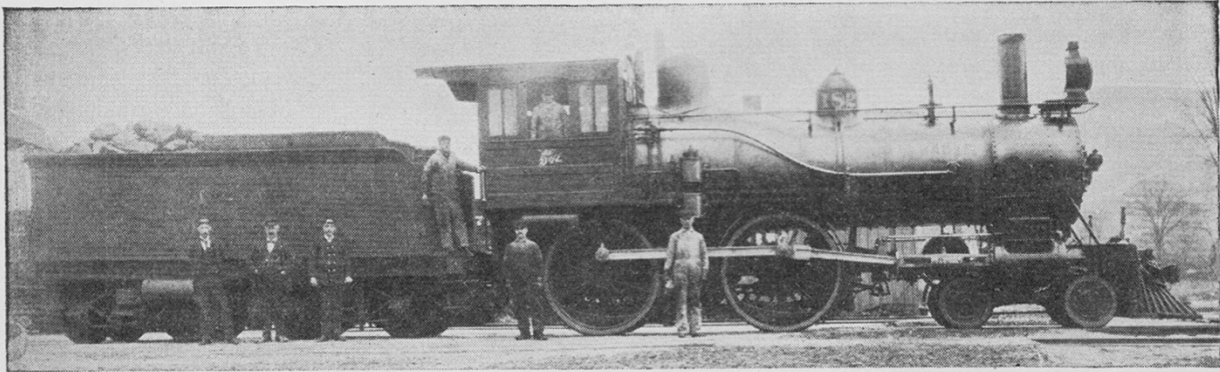
Collection of Darren E. Hadley



*D&H ALCo Switcher No. 152*

From the photo given below and its caption, which were published in *The Delaware and Hudson Railroad Bulletin*, May 1, 1938, p. 76, we have learned of the existence of four D&H engines with animal names: Nos. 182, 183, 184, and 185. Here is that photo and its caption:

## Old Locomotive Identified as the “Antelope”



The above photograph, originally published on Page 52 of the April issue under the caption “Who Can Identify This Old Locomotive and Crew?” has been identified by retired RECORDER W. J. COUGHTRY as No. 182, originally named the “Antelope,” built by the Dickson Manufacturing Company, and shipped from Scranton, Pa., August 22, 1882. The “Antelope” had 68-inch drivers, 19- by 24-inch cylinders, 30-inch Allen paper truck wheels, weight on drivers 66,500 pounds. The tender carried 22,500 gallons of water and she was built to burn anthracite. The “Antelope” was later renumbered 380. Three other locomotives received at about the same time were: No. 183, the “Reindeer”; No. 184, the “Leopard”; and No. 185, the “Panther.”

### **No. 182: Antelope**

--engine built by the Dickson Manufacturing Company and shipped from Scranton on August 22, 1882; the *Antelope* was built to burn anthracite; it had 68-inch drivers, 19- by 24-inch cylinders, and 30-inch Allen paper truck wheels; weight on drivers 66,500 pounds. The tender carried 22,500 gallons of water. No. 182 was later renumbered to No. 380

### **No. 183: Reindeer**

### **No. 184: Leopard**

### **No. 185: Panther**

**No. 215:**



*D&HCCo. Engine No. 215, Camelback, Dickson Manufacturing Company, 1884; see photo on the bottom of page 447 of Shaughnessy. This engine, as shown here, was rebuilt in 1899 at Green Island and re-numbered to No. 215. Photo made available for use here on November 14, 2015 by John V. Buberniak.*

**No. 237:**

--shown here in 1898. Photo made available by John V. Buberniak on January 4, 2016

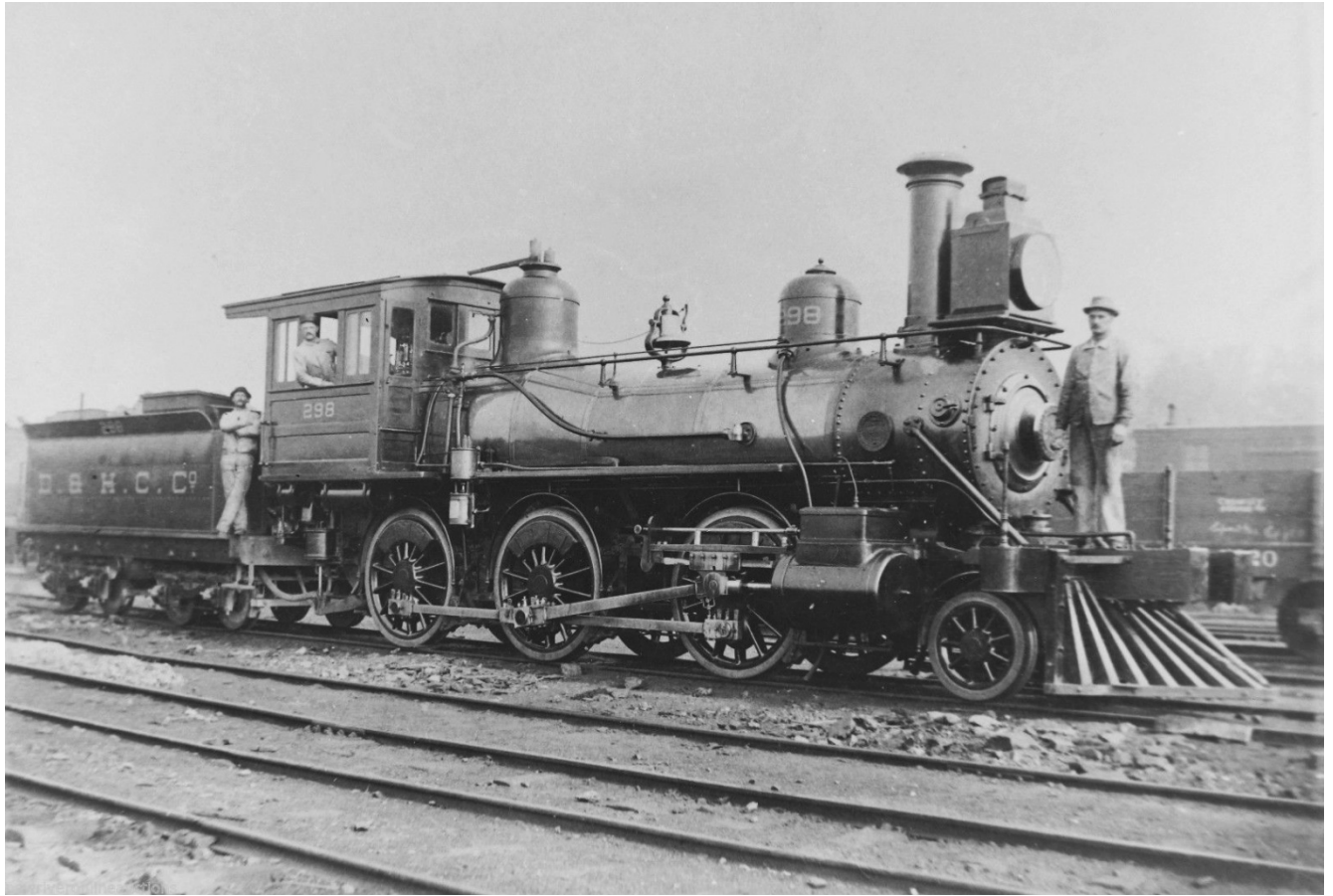


↑  
“Taken March 13, 1898”  
(possibly March 15)

*D&H No. 237*



**No. 298:**



*D&H No. 298*

John V. Buberniak, November 20, 2015: “No. 298 was made at Schenectady in 1900, and rebuilt to become No. 763; scrapped in August of 1946.”

## No. 302:

This photo of No. 302 was downloaded from *Facebook*, November 19, 2015 from Bob Cullen's page. It is a J. J. Young photo.



"Delaware & Hudson 4-8-4 #302 leads a southbound mixed train towards Carbondale on the Penn Division beneath Erie Lackawanna's Viaduct at Lanesboro, Pennsylvania in May of 1973. The big Northern is actually Reading T-1 #2102, dressed as a D&H Class K-62, complete with the elephant-ear smoke deflectors. There were fifteen of these modern 4-8-4s manufactured by Alco in 1943 (#300-314) but survived barely a decade before being replaced by diesels. None survive. J. J. Young photo." (caption from Bob Cullen's site)

Comment by William Chalik: "No. 302 is currently in Port Clinton, PA, but not in service in 2015. Last steamed in 1991."

**No. 312:**

*D&H No. 312 at Oneonta, December 1946.* Post card in the collection of the Carbondale D&H Transportation Museum.



*D&H No. 312 at Oneonta, December 1946*

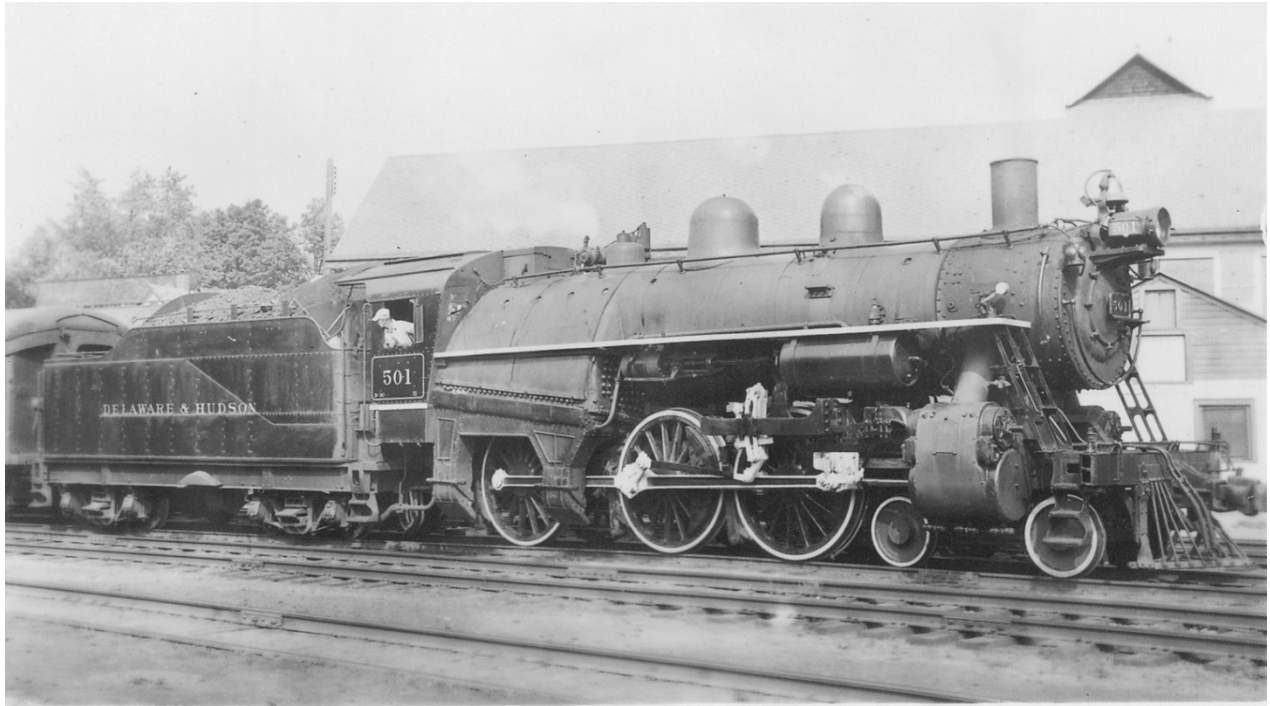
**No. 500:**

"D&H No. 500, passing through Carbondale, November 9, 1951." No. 500 was built by ALCo in 1903. Photo by Bob Collins. Post card in the collection of the Carbondale Historical Society. The closely spaced domes reveal this engine to be a former Camelback.



**No. 501:**

D&H No. 501, shown here at Saratoga. Post card in the collection of the Carbondale Historical Society.

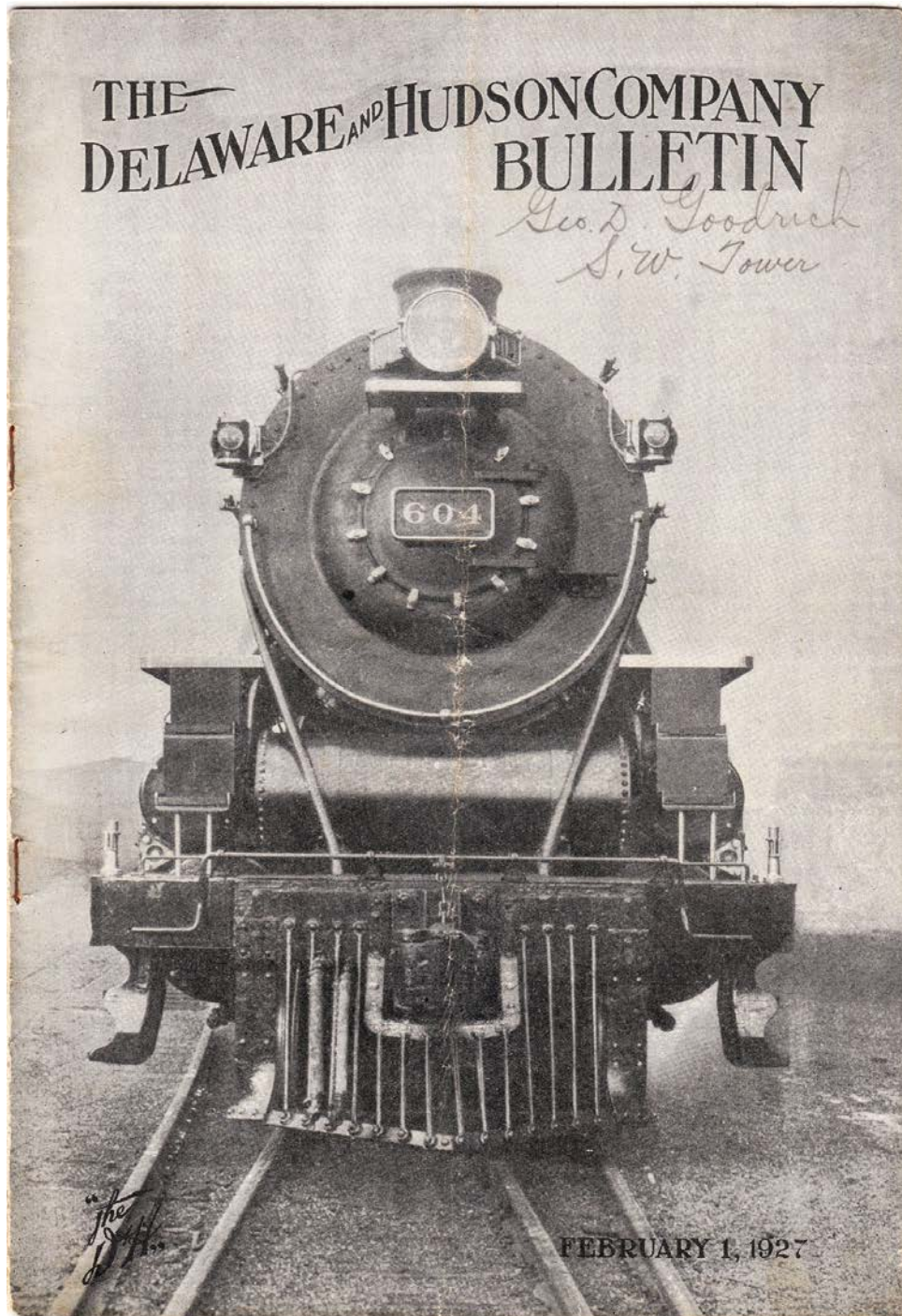


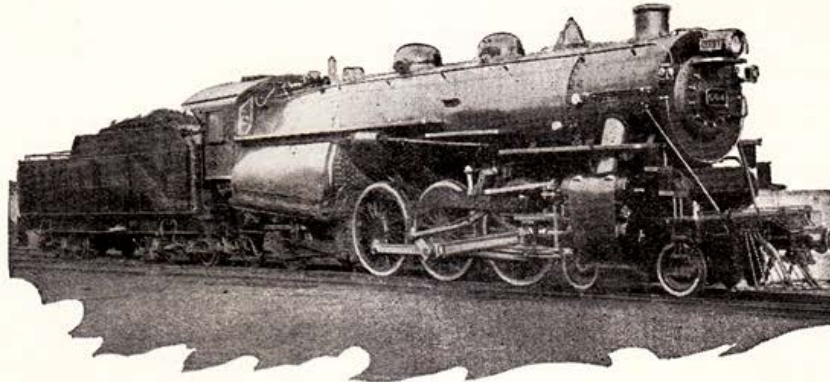
*D&H No. 501*



**No. 604:**

D&H No. 604 is featured on the cover and in the February 1, 1927 issue of *The Delaware and Hudson Company Bulletin*: "Nickel Now Adorns The '604, ' " pp. 39, 45.





LOCOMOTIVE No. 604

## *Nickel Now Adorns The "604"*

*In Service Between Albany and Montreal, This Locomotive, the Latest Addition to Our Nickel-Plated Fleet, Is Performing with Credit to Itself and the Service*

WITH the return to service of the "604," recently, our fleet of nickel-plated locomotives was increased to three. Resplendent in its new regalia of nickel and polished steel, outstanding against a background of deep black, it is the equal of the "561" and the "606" in appearance and a distinct credit to the workmanship of the mechanics in the Colonie shops where it first received a thorough overhauling better known to those directly interested in such work, as S3XFT repairs. It is now running between Albany and Montreal, on trains Nos. 9 and 10 and opposite the "606," and acquitting itself in a way to bring credit to our service.

That the scheme of nickel-plating is not designed for show purposes, is to be found in the fact that, as in the case of the other two locomotives, it has been made to include the fittings inside the cab seen only, as a rule, by the engineer and fireman. The effect, it has been noted, is to encourage neatness and if an engineer of the day when immaculate engines were not alone the rule but were insisted upon by the men of his class, was to return he would find himself very much at ease in any one of the locomotives comprising the nickeled fleet. Not only do the crews assigned to these locomotives take great pride in their neatness but they are joined by

roundhouse and other employees in maintaining them as models in this respect.

No pipes intercept its graceful lines above the footboard on the right side, while on the left side only the injector pipe, now brightly polished, is to be seen; special planished steel jackets, with seams finished with brass rivets, cover the boiler and cylinders, and footboards and all tires have been trimmed with aluminum paint. Being equipped with an engineer's steel cab of the very latest design, it differs in this one respect from the "606."

All motion work parts and all main and side rods are draw filed and polished, and the following parts nickel-plated: Boiler fittings inside cab, including throttle lever and reverse gear wheel; headlight and headlight shelf angle irons; footboard angle irons; number plate rim and numerals; front rail on smokebox; flag and lamp post brackets; port hole covers; boiler checks; bell; washout plug covers; air pump governor; injector steam pipe brackets; star washers and nuts on cylinder casings; guide oil cups, and covers over cylinder port plugs.

In the boiler shop the boiler received a new throat and back flue sheet, a set of small flues

(Continued on Page 45)



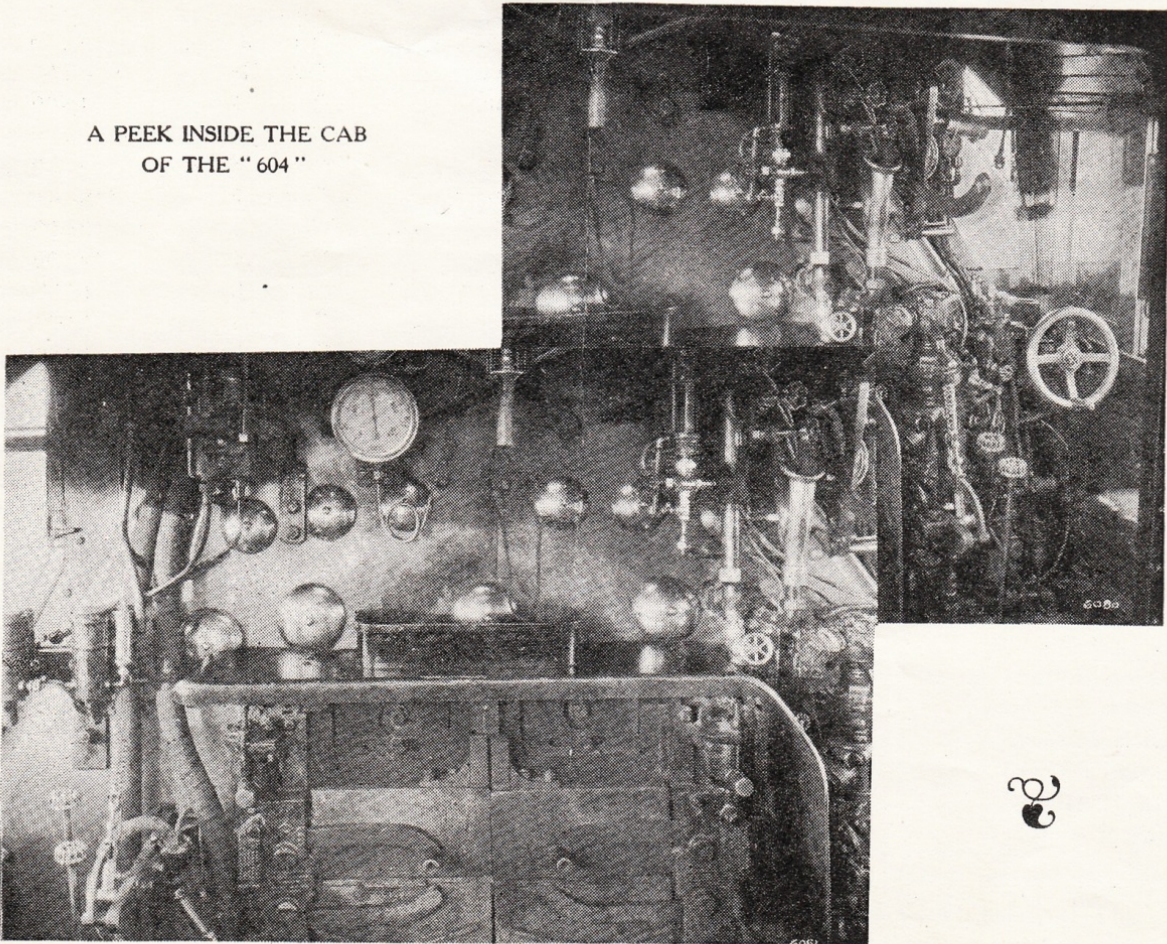
## Nickel Now Adorns the "604"

(Continued from Page 39)

and a set of superheater flues, while the engine work included the application of new driving axles, two new main wheel centers; a complete set of new driving boxes, new tires, a complete set of new crank pins, new guides, new side and

main rods equipped with solid main rod floating bushings, new piston rods and heads, new cross-heads, new non-lifting injectors, while in the tank shop the tender trucks were given a general overhauling and the tank painted and varnished.

A PEEK INSIDE THE CAB  
OF THE "604"



1, 1927

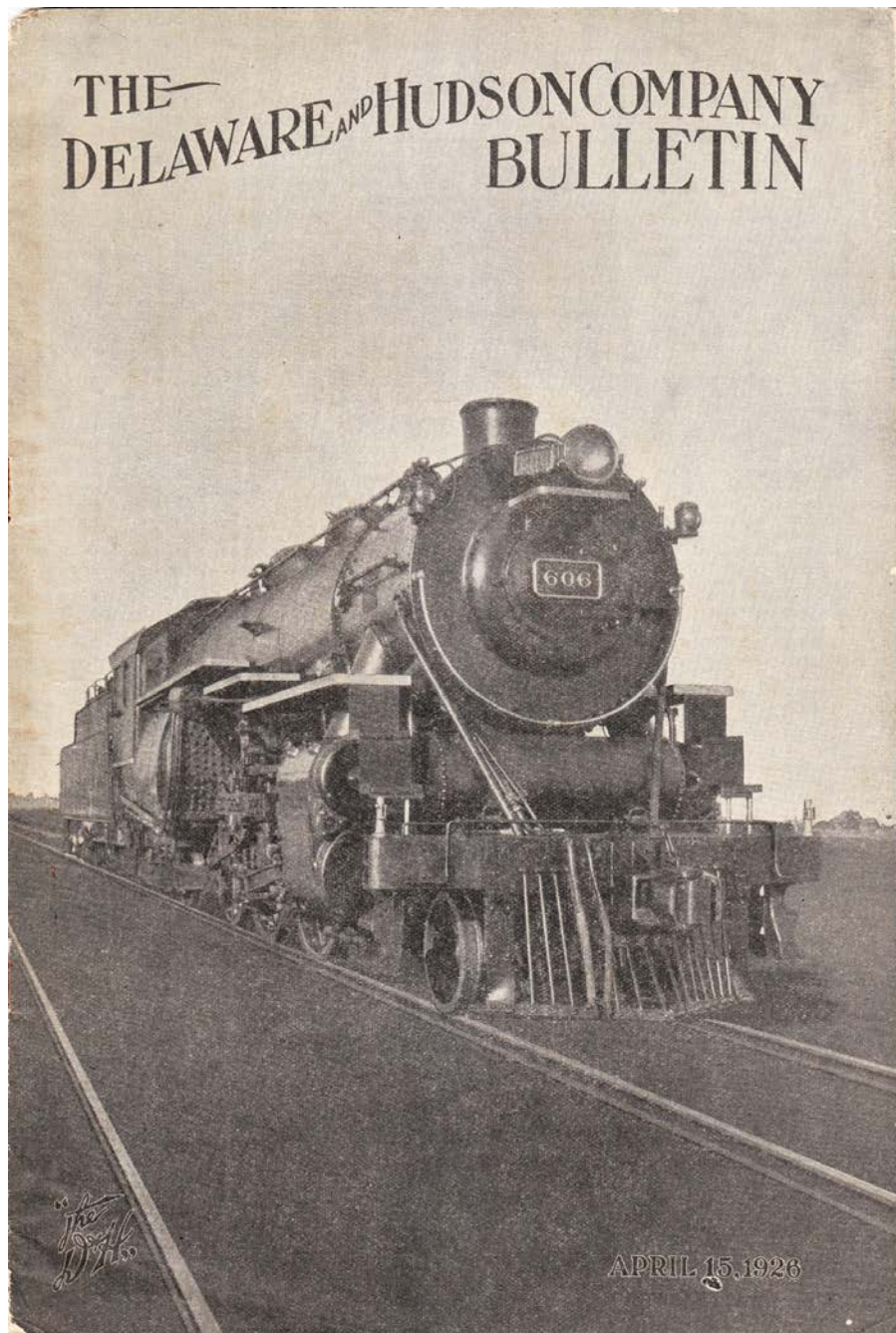
forty-five

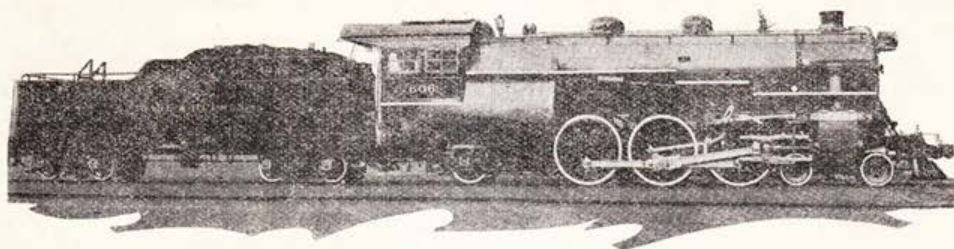


**No. 606:**

----ALCo, 1914, class P, 4-6-2; rebuilt at Colonie and now "Resplendent in Nickel and Polished Steel"; used on the Montreal passenger run

D&H No. 606 is featured on the cover and in the April 15, 1926 issue of *The Delaware and Hudson Company Bulletin*: "Reflects Mechanic's Touch," pp. 7, 12:





Dressed Out in Nickel and Polished Steel

## *Reflects Mechanic's Touch*

*Locomotive No. 606 on Montreal Passenger Run, Resplendent in Nickel and Polished Steel, Is Pride of Colonie Mechanics Who Did the Trick*

**W**AS he dreaming? The old engineer rubbed his eyes and looked again. No, there it was—a mammoth steam locomotive, neatly trimmed and immaculately groomed—a thing of life and beauty, panting fretfully as if impatient to be on its way. Backward, through the mist of some forty odd years, his thoughts sped and for a brief moment he revelled in memories of his fire-boy days. Again he saw the little woodburners, with their top-heavy stacks, gaudily bedecked in brass ornaments and fittings, and harnessed in numberless glittering copper pipes.

Quickly, however, the past faded away, and he found his gaze still fixed on this modern counterpart of those earlier engines, the rays of a winter's noon-day sun dancing sprightly along nickeled hand rails that girded its lithe, stream-line form. How he yearned to climb once more up into the cab and notch the throttle and try her steam, just a bit. And the air—oh, yes, he knew how to work it, although in the beginning of his career there had been no such thing, and so he'd helped the brakies in their task of applying the "arm-strong" brakes, by throwing the little woodburning steeds into back motion.

Yes, it was still there—this twentieth century monster of the rails—with a long train of big steel coaches in its wake, and so he proceeded to a minute inspection. Within a nickel rim the number plate bore the nickeled figures "606." From the maker's plate he learned that the locomotive had been built in the Schenectady plant of the American Locomotive Company during the year 1914, and he saw, too, that it was a Class P engine, Type 4-6-2. Why, he had seen that same engine many times before, of course, but not in

a fine garb of bright nickel and highly polished steel and copper.

All the boiler fittings inside the cab were of nickel, as was the throttle lever and the reverse gear wheel. Up front, he found the headlight and its shelf nickel trimmed and, as he continued his inspection, he noted the scheme to include, also, the smokebox front rail, the flag and lamp post brackets, the port hole covers, boiler checks, bell, washout plug covers, air pump governor, air cooling pipe brackets, injector steam pipe brackets, star washers and nuts on cylinder casings, and the covers over the cylinder port plugs.

Above the foot boards on the right side not a pipe was to be seen breaking the conventional stream-line effect, and on the left side there was but one—the injector pipe of polished copper that shone with the splendor of cut glass. The boiler and cylinder jackets were of special planished iron, with brass rivets holding the seams securely. Foot-board angles and all of the tires were trimmed with aluminum paint. And, lastly, he found the main and side rods, and all motion work parts, draw filed and polished. Every fitting, every part, reflected the care and pride of a master mechanic. No detail had been slighted, no pains had been spared to make the work a masterpiece.

As he proceeded from one part to another, he marvelled at the excellent workmanship and naturally questioned the reason for it. In the crowd of a score or more who were following suit in admiring the engine, he found a man who explained that the work had been done somewhat

(Concluded on Page 12)



*Reflects Mechanic's Touch]*

(Continued from Page 7)

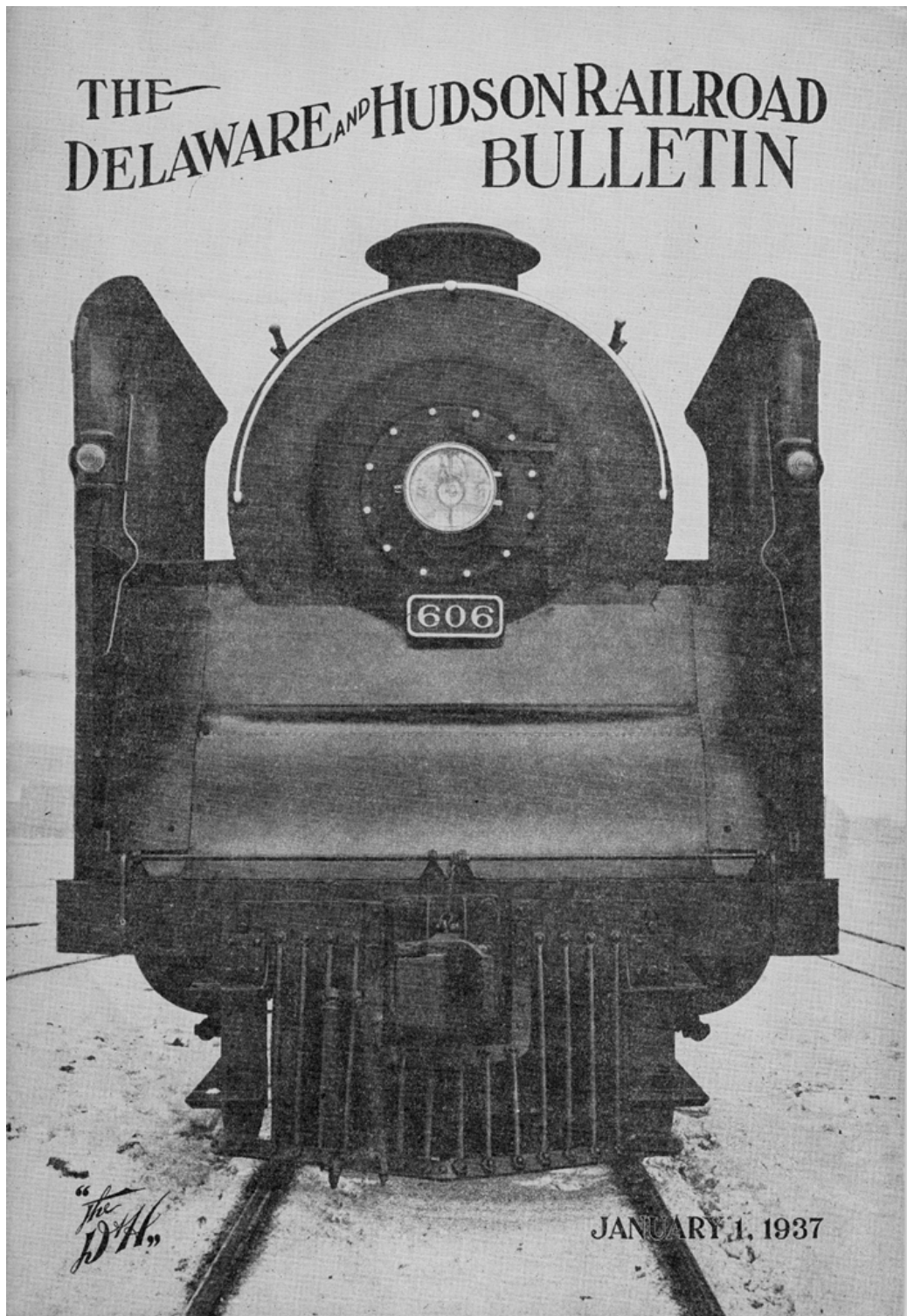
in the nature of an experiment. "We Americans," he said, "are constantly reminded that English and German mechanics, and possibly others, are more expert than are we; that in our haste to get work done quickly we sacrifice precision. Railroading in America is an intensive work; the public demands quick and frequent service, and the ups and downs of this demand have brought about a practice in the handling of locomotives commonly characterized as 'rush 'em in and rush 'em out.'

"To see whether or not we were being fairly rated with our English and German neighbors across the sea, who value micrometrical accuracy above the imperativeness of time, it was decided to follow their practices when giving this engine S2FT repairs at the Colonie shops. A sort of check-up, or test, you know. The results were highly satisfactory for the engine has since been subjected to all manner of tests and has met each with credit to the workmanship of the shop's mechanics. Just at present it is making an enviable on-time record on our Montreal Limited, better known as Trains Nos. 9 and 10. Truly, the charge that mechanical art has been lost has been disproven and we are satisfied that our men can claim a place alongside the best.

"In the shop the boiler work included the building of a new firebox and the installation of new small flues and new superheater flues, while the engine work consisted of fitting new driving boxes, applying new driving tires, crank pins and driving axles, two new main wheel centers, complete sets of new driving rods and guides, heavy design water column brackets, Nathan force feed lubricator, new style engine truck boxes, new vanadium trailer springs, precision reverse gear, new piston rods, heads and crossheads. Meanwhile, the tank was lengthened out ninety inches, increasing its capacity from 8,000 to 11,000 gallons, given two new outside channels, and equipped with two new tender trucks complete with 6½" by 12" journals and forged steel wheels. Numerous other details such as piping and painting were carried out with corresponding care and accurateness.

"Throughout the work of repairs, the men took a genuine delight in the opportunity to give their skill full fling, and found pride in the results that followed. Now that the engine has left the shop, they are constantly interested to learn of its performance and feel that whether good or bad it is more or less dependent upon their workmanship—they are responsible, equally, with the engineer handling it. Their mechanical ability has been proven. In our haste we may not micrometer all parts, as our critics like to accuse us, but even at that we build better than if we were only slam-bang or jack-knife mechanics."

D&H No. 606, with smoke lifters installed, also appears on the cover of the January 1, 1937 issue of *The Delaware and Hudson Railroad Bulletin*:



**"Smoke Lifters** / Delaware and Hudson passenger locomotives like the 606, pictured on the front cover of this issue, now carry a smoke-lifting device consisting of an inclined sheet of steel rising from the pilot beam to the smoke-box at the level of the running-boards, and two vertical plates curved in at the top which roughly parallel the sides of the smoke-box, being slightly closer at the rear. The currents of air swept up past the sides of the boiler through the passages thus provided deflect the steam and smoke from the stack so that they no longer sweep down around the cab to obstruct the vision of the crew. The device is peculiar to Delaware and Hudson locomotives in this country, though in general use in Europe. It is said to require about 100 horsepower to overcome the air resistance created by the device when traveling at 100 miles per hour, which is not a matter of major importance in most cases since this speed is not commonly attained and the resistance decreases very rapidly at lesser rates of speed." (January 1, 1937 issue of *The Delaware and Hudson Railroad Bulletin*, p. 6)

For more on smoke lifters/elephant ears, see herein pp. 101-102.

**No. 607:**

--motive power for the *Montreal Limited*

No. 607 is the cover photo on the January 1, 1931 issue of *The Delaware and Hudson Railroad Bulletin*. A photo of No. 607, having been recently overhauled, is given on pp. 8-9 in the same issue of *The Delaware and Hudson Railroad Bulletin*.

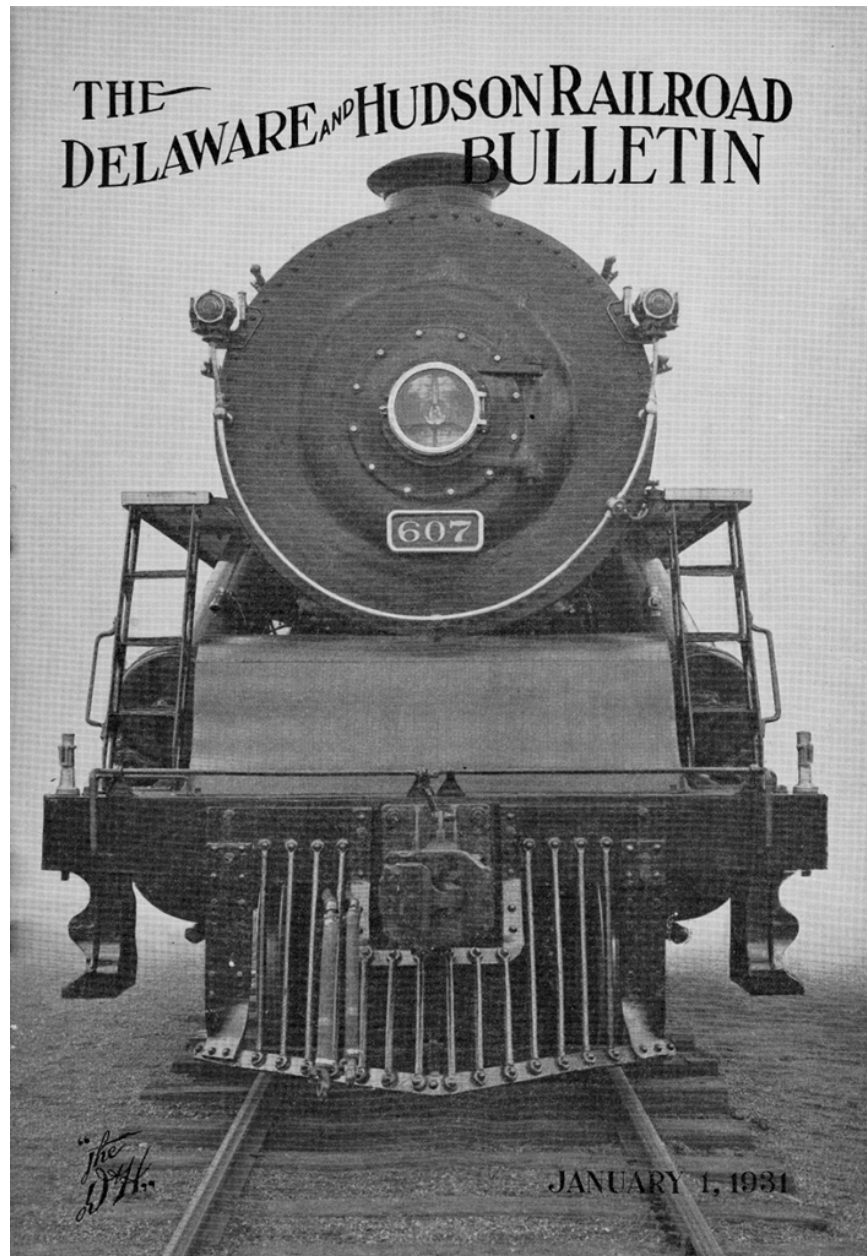
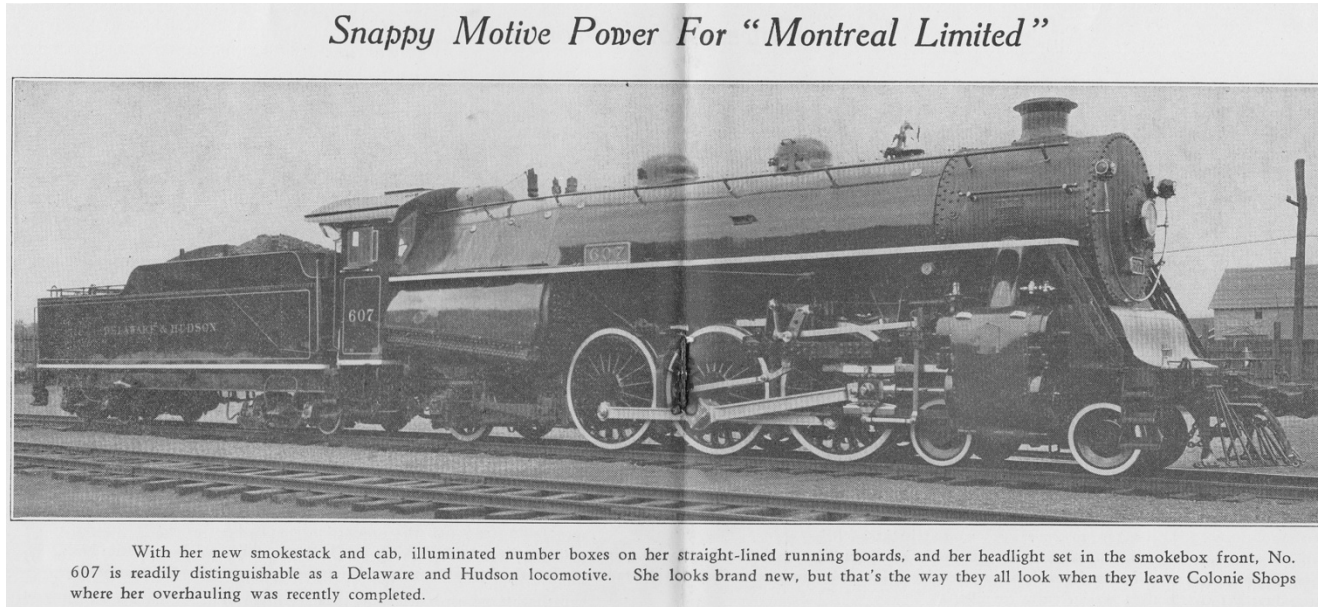
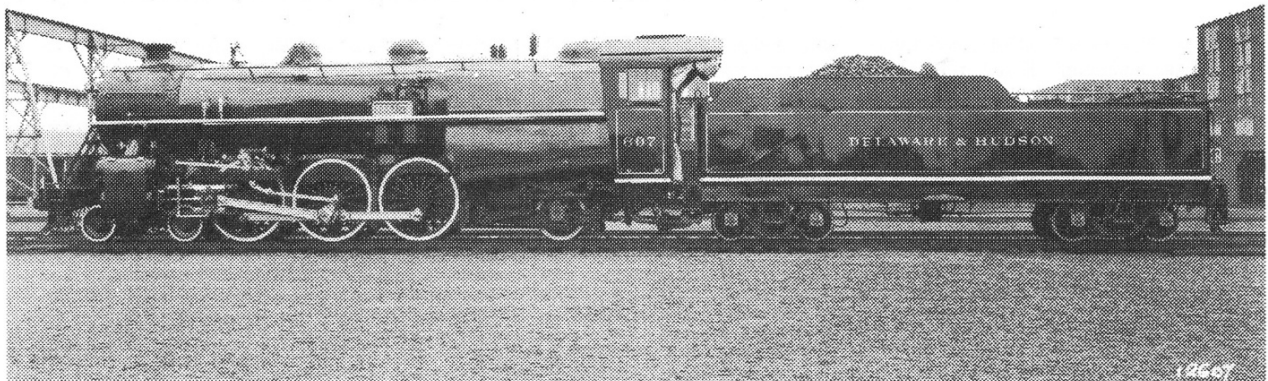


Photo of No. 607: pp. 8-9:



The photo of Pacific No. 607 that is given below is reproduced here from page 33 of the February 2016 issue of the *Bridge Line Historical Society Bulletin*, where it has the following caption: "D&H Co. Pacific #607, probably fresh out of Colonie Shops. D&H photo, courtesy of Chris Shepherd."





**No. 609:**

--had elephant ears, made at Schenectady/ALCo, in 1914, Class P, 4-6-2; rebuilt at Colonie, 1926. When rebuilt it was "resplendent in nickel and polished steel" and used on the *Montreal Limited* (Trains Nos. 9 and 10)

Greg Flynn, *Facebook*, November 15, 2015: "The 609 was the first locomotive to have roller bearings applied to its driving axels. The story goes that Loree approached the Timken Company about the application, and they declined to design a set saying it wouldn't work and wasn't practical. Loree then approached the SKF Company, and they designed and supplied the bearings used on the 609, the first such installation in the world."

## The 650 Series Engines, the French Pacifics

--designed for the run to Montreal

In Tim Richmond's monthly column (*The Mail Car*) in the February 2016 issue of the *Bridge Line Historical Society Bulletin*, on p. 6, we read the following about the "French Pacifics":

*"The 650 series engines"* from Warren Martin / The D&H 650's were designed for the run to Montreal. They had big coal bins, so they could go from Whitehall, lay over, and get back without buying any coal in Canada. The 653, as built, had the most tractive effort of any 4-6-2 ever built. It beat a lot of 2-8-0's. / Shaughnessy called the 650's 'prima donnas', but they were far from that.\* One would take the run up one day, and another the next day, as the first one came back. That engine would then go into Colonie for flue/smokebox cleaning. The third engine would then make the run up. They did this day in/day out for many years. The only one that had time off was 653, when they changed the type valve gear and lowered the boiler pressure."

\* Shaughnessy's use of the term *prima donna* is absolutely correct. He is using the term *prima donna* with its original meaning, and not with the pejorative secondary meaning that the term acquired over the years.

**No. 651:**

--built by the D&H in 1930; used on *The Laurentian* (Trains 34 and 35, Montreal-New York Daylight Service)

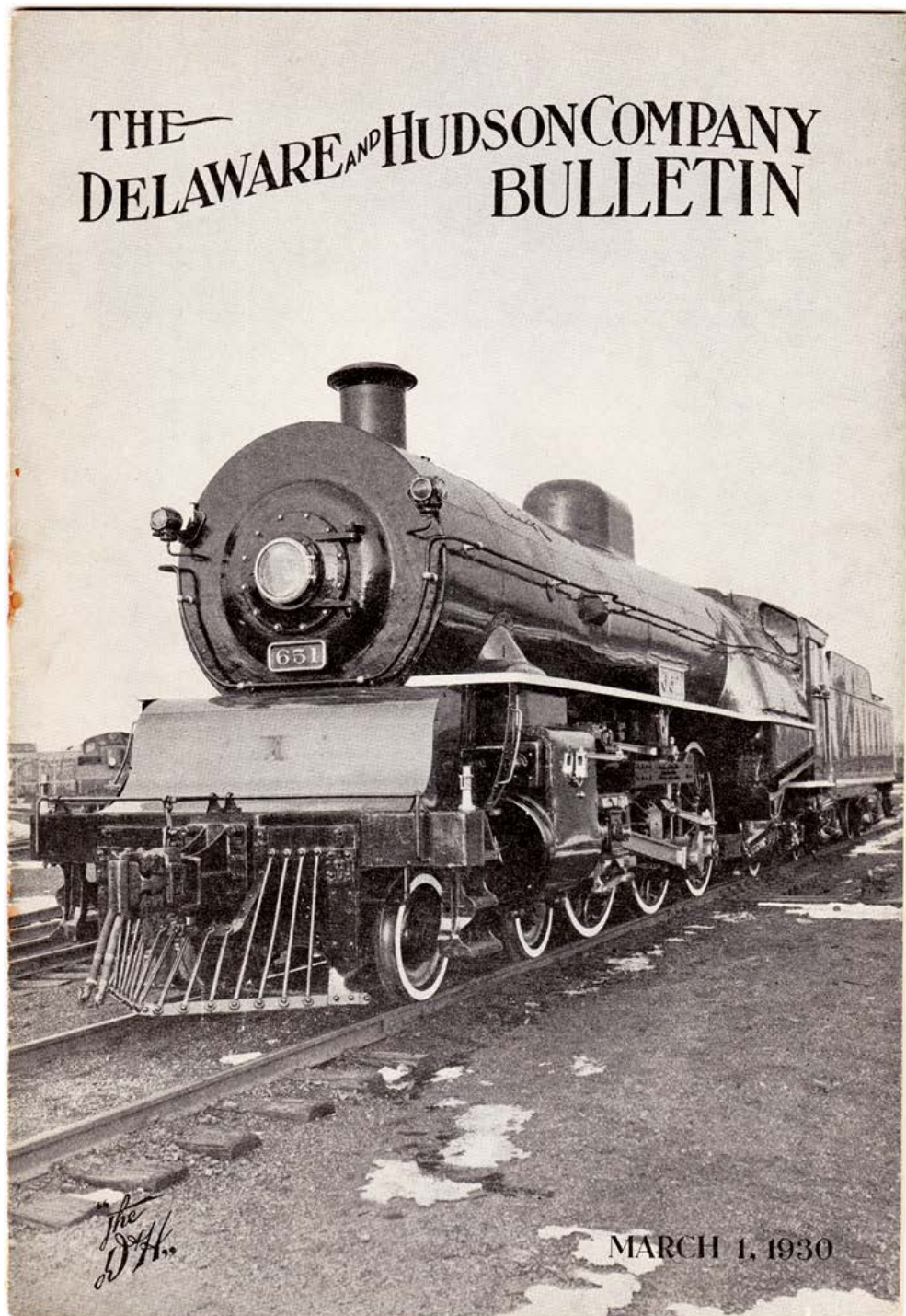
Here is the official portrait of *No. 651* that is presented in the *1936 Inspection of Lines* book, p. 24:



LOCOMOTIVE 651

Built by The Delaware and Hudson Railroad Corporation in 1930. Type 4-6-2. Gauge of Track 4'8½". Cylinders, Diameter 22", Stroke 28". Driving Wheel Diameter 73". Boiler, Straight Top, Inside Diameter 74½", Pressure 275 Pounds. Fire Box, Length 116½", Width 108". Tubes, Superheater 142, Diameter 3½", Length 19'7", Ordinary 30, Diameter 2¼", Length 19'7". Wheel Base, Driving 13'0", Engine 35'3½", Engine and Tender 74'8½". Weight, on Engine Truck 55500 Pounds, Drivers 191000 Pounds, Trailer 53500 Pounds, Total Engine 300000 Pounds, Engine and Tender 460500 Pounds. Fuel, Anthracite and Bituminous. Heating Surface: Tubes 2879, Fire Box 246, Arch Tubes 37, Total 3162 Square Feet, Superheater 1495 Square Feet. Tractive Power 44000 Pounds. Tender Capacity, Water 11000 Gallons, Fuel 14 Tons.

No. 651 is featured in the March 1, 1930 issue of *The Delaware and Hudson Railroad Bulletin*, on the front cover and on pages 72-73:





## *Latest Addition to Our*

*Poppet Valves Distinguish Locomotive 651, Newest Product of Our Colonie Shops, W*

THE success of Locomotive 652, a description of which appeared in *The Bulletin* of June 1, 1929, in performing the work required of it in handling one "side" of our fast Montreal-New York day train, *The Laurentian* has led to the construction of a running mate, Number 651, which, to the casual observer is identical with the original experimental type. There is however, one radical difference and that is in the valves which control the steam distribution to the locomotive cylinders.

Locomotive designers during recent years have been striving to increase the operating efficiency of their product in various ways. Compounding of steam pressures, long a standard practice in Europe where fuel is very expensive, was abandoned in America with the coming of the superheater as maintenance costs of compound locomotives were felt to be out of proportion to the benefits derived from the more efficient use of the steam which resulted from compounding.

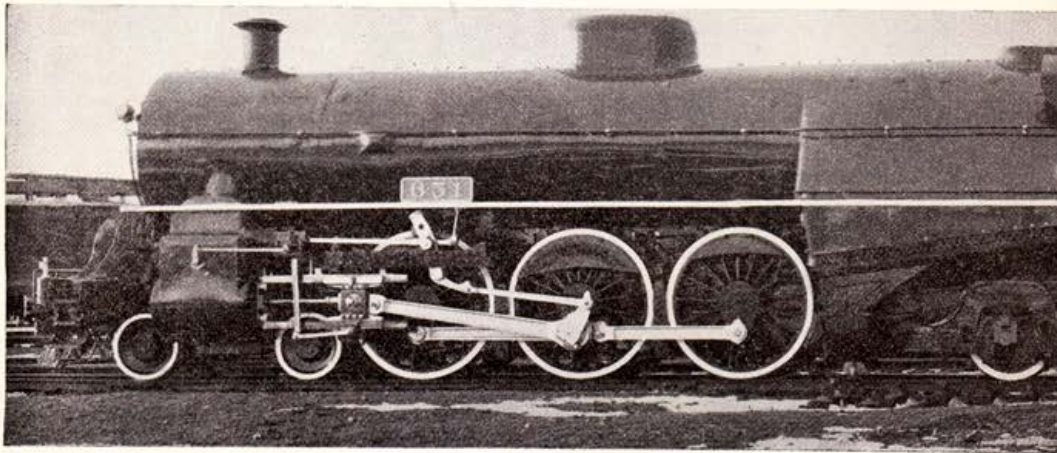
Modern operating efficiency, however, demands improved performance by motive power as well as every other part of the railroad organization. To this end boiler pressures are being increased, superheaters re-designed, and improvements made in throttle valves and pipes to decrease resistance

to the passage of the steam, as this reduces its capacity for doing useful work.

Prior to the introduction of the superheater and its accompanying high steam temperatures, the slide valve and Stephenson link valve gear, driven from eccentric cams located on the main axle between the engine frames, were in general use. Increasing size of locomotives necessitated the enlargement of valve gear mechanism parts to such an extent that this arrangement became too cumbersome for use. A Belgian engineer, Walschaert, then devised the system of cranks and levers driven jointly by the movement of the main crank pin and the locomotive crosshead, which is in general use today as the Walschaert gear.

In order to overcome difficulties experienced with the slide valve when working superheated steam, a new design consisting of a spool-shaped piston valve, was developed. While fairly satisfactory this type was far from being perfect as a steam distributing element, maintenance cost being considerable due to wearing of the rings and valve chamber bushings which, if not attended to, resulted in steam leakage and loss of power.

Just as throttle valve designers turned from the piston type of valve to the poppet so the de-



## *Passenger Motive Power*

*is to be Assigned to Trains Nos. 34 and 35 in Montreal-New York Daylight Service*

signers of steam chest valves sought to make use of the same device.

The Lentz Poppet Valve in combination with the Walschaert gear with which Delaware & Hudson Locomotive 651 is equipped, consists of four poppet valves, one inlet and one exhaust valve at each end of either cylinder, somewhat similar to those used in most internal combustion engines used in automobiles. The locomotive valves are, of course, much larger and their construction differs from the usual "mushroom" shape in order to make them strong enough to control the pressure of 275 pounds per square inch which the boiler of this locomotive delivers.

The valves are operated by a cam shaft, just as in automobile engine. This shaft is caused to rotate, or rather oscillate, by the movement of the valve rod which connects the valve crosshead to a lever arm on the end of the cam shaft. (With the piston or slide valve this valve rod would have been attached direct to the valve stem.) Otherwise the valve gear is identical with that of the usual type of locomotive.

In addition to giving better steam distribution it is claimed that the poppet valves remain absolutely tight over long periods of service, need no

lubrication, and require very little power for their operation.

It is anticipated that the use of poppet valve will result in more efficient operation. In order to check this point accurately Locomotives 651 and 652 have been built along identical lines and results obtained when run on the same trains day after day should test the merits of the two types of valve gear quite conclusively.

The customer stretched his legs and surveyed the remains of his glorious repast.

"Ask the manager to come along," he said to the waiter.

That worthy, suave and smiling, appeared.

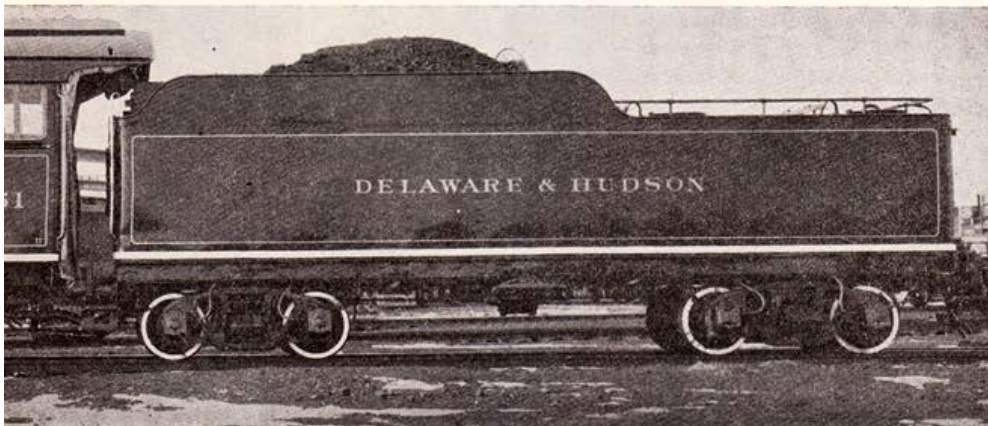
"You the manager?"

"I have the pleasure, sir."

"Well," said the customer, "five years ago I dined here, was unable to pay my bill and you kicked me out."

"I'm very sorry, indeed, sir," said the manager, with an apologetic look; "but I'm sure you will understand that business is—er—"

"Oh, don't mention it. Might I trouble you again?"

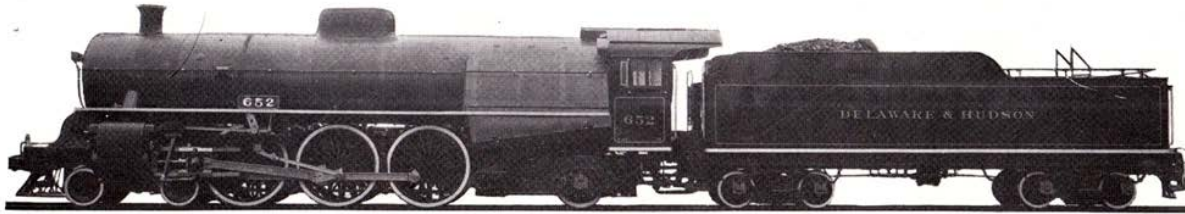




**No. 652:**

---built by the D&H in 1929; used on *The Laurentian* (Trains 34 and 35, Montreal-New York Daylight Service)

Here is the official portrait of *No. 652* that is presented in the *1936 Inspection of Lines* book, p. 25:



LOCOMOTIVE 652

Built by The Delaware and Hudson Railroad Corporation in 1929. Type 4-6-2. Gauge of Track  $4'8\frac{1}{2}"$ . Cylinders, Diameter 22", Stroke 28". Driving Wheel Diameter 73". Boiler, Straight Top, Inside Diameter  $74\frac{1}{2}"$ , Pressure 260 Pounds. Fire Box, Length  $116\frac{1}{8}"$ , Width 108". Tubes, Superheater 142, Diameter  $3\frac{1}{2}"$ , Length 19'7", Ordinary 30, Diameter  $2\frac{1}{4}"$ , Length 19'7". Wheel Base, Driving 13'0", Engine  $35'3\frac{1}{2}"$ , Engine and Tender  $74'8\frac{1}{2}"$ . Weight, on Engine Truck 45000 Pounds, Drivers 185300 Pounds, Trailer 53000 Pounds, Total Engine 283300 Pounds, Engine and Tender 443800 Pounds. Fuel, Anthracite and Bituminous. Heating Surface: Tubes 2879, Fire Box 246, Arch Tubes 37, Total 3162 Square Feet, Superheater 1495 Square Feet. Tractive Power 41600 Pounds. Tender Capacity, Water 11000 Gallons, Fuel 14 Tons.

No. 652 is featured on the front cover of the June 1, 1929 issue of *The Delaware and Hudson Company Bulletin*; also on pages 168-169, 172:

# THE DELAWARE AND HUDSON COMPANY BULLETIN



No. 652, made in D&H shops, blue-gray boiler jacket, competed in Spring of 1929. No. 652 was the first engine with "the Loree look"



## New Motive Power

*Locomotive 652, Built at Our Colonie Shops, Combines Sturdiness and Simplicity*

THE "skyline" of the modern locomotive of the conventional design has gradually come to resemble that of a fair sized city due to the many odd shaped humps and bumps which rise above the line of the boiler shell. The headlight has, in many cases, been dropped down on to a shelf extending out from the boiler front. In its place is located the conventional bell. Bells of this type have been used on locomotives practically ever since the practice of sending ahead a horseman with a tin horn to warn of the monster's approach was done away with. With the invention of the new type of bell ringers the stationary bell with a vibrating tongue has become a mere gong but the conventional patterns are still used in most cases.

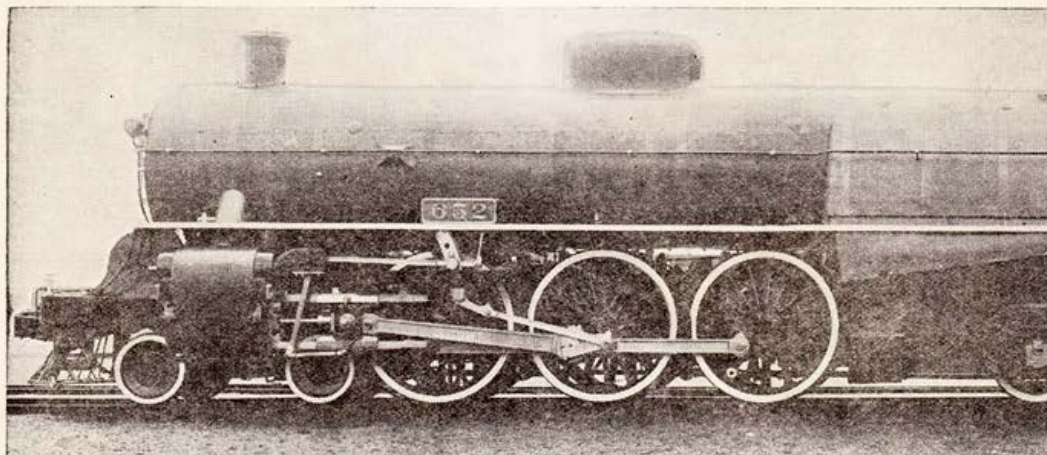
Where the bell has not been located ahead of the smoke-stack we might, perhaps, see there a projection nearly the size of the smoke-stack itself, this being the so-called "front end throttle". Then, as we go toward the rear of the locomotive, a man-hole cover over the superheater units, a sand box, the bell (if still in its original location), the electric generator, the steam dome, another sand box, a "pop" dome (for the safety valves and whistle) and then the cab. Below this "sky line", so that they do not appear in

the silhouette, but showing up as bumps and projections, are such items as air and feedwater-pumps, reservoirs, reverse gears, and all the piping necessary to connect them up.

Critics of American design have for some time pointed to the European practice of concealing such devices as producing a much better appearance, but the answer has always been that accessibility was of primary importance to facilitate repairs.

With the firm conviction that a locomotive properly built should not require extensive repairs between shoppings "the 652" has been designed and built along lines which will mark her as unusual although in no sense a freak.

Built to handle *The Laurentian*, our New York-Montreal daylight express, she has low racy lines and an unusually clean-cut appearance. A graceful stack and a large dome casing which conceals the main steam dome as well as the safety-valves and the mellow chime whistle located just in back of the dome are the only projections above the straight line of the boiler jacket. Even the cab is almost a continuation of the straight line of the top of the boiler due to the manner in which the cab turret, which is located just in front of the cab, is jacketed in.



## *"The Laurentian"*

*n With Many New Features, Resulting in Greater Efficiency of Operation*

The headlight is sunk in a recess in the center of the boiler front. This location necessitated the design of an absolutely new type of headlight as the wires could not be brought in at the rear of the reflector because of the high temperature of the smoke-box. For this reason they enter at the top and the socket holds the bulb at the exact focus of the parabolic reflector and no shadow is cast by the socket or the conduit to which it is secured. The wiring for the classification lights is likewise run in pipe instead of the usual flexible cable, the idea being to make these wires trouble-proof as their location makes them much more attractive as grab-irons than the handrail which is provided for the purpose a few inches away.

Because of the location of the headlight it is impossible to show illuminated number plates at the sides of the light at night. For this reason electrically lighted number boxes are located on each running board. These boxes consist of a nickel frame and a ground glass plate bearing the number "652" in large figures.

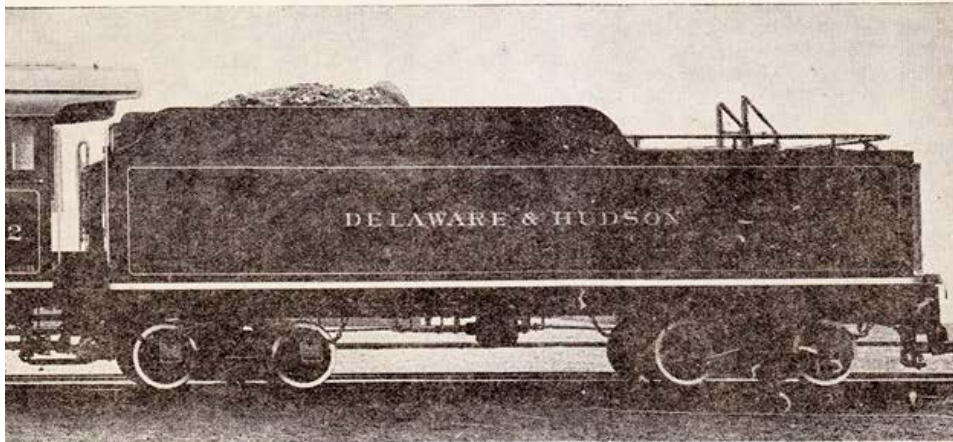
The sand boxes are placed beneath each running board just in back of the cylinders (as was done on "the 449"). Just behind the sand boxes are, (on the right) a five-feed mechanical lubri-

cator supplying valve, cylinder, and air pump lubrication, and (on the left) a flange oiler which drops oil on the flanges of the front driving tires to reduce the wear which is caused when rounding curves.

Between the frames just back of the main axle is the cross-compound air pump from which the air for the brakes is piped to a large reservoir under the smoke-box at the front of the engine. This reservoir has been concealed under a neat cover of jacket iron, so shaped as to cause an upward current of air which may assist in clearing the engineman's vision of smoke and steam. Under this same cover is located the bell, an air operated gong which gives an effect very similar to the latest type of pneumatic bell-ringer.

The electric generator is located between the frames, just back of the cylinders. The exhaust steam from the air pump is conducted into the exhaust cavity of one cylinder while that of the generator enters the other cavity, thus preventing condensation and also acting as a drifting valve when the throttle is shut off. This prevents the pounding of the rods and sucking of cinders and dirt into the cylinders from the smoke-box when running down-hill.

(Turn to page 172)





*New Motive Power*

(Continued from page 169)

The cab is the most unusual and surprising part of the entire locomotive. From the outside it appears quite small but its appearance is deceiving. Since the boiler butt does not project into the cab, because of the wide firebox, and the lack of complications in the way of stokers, lubricators, etc., the entire space is available for the use of the engine crew. Due to the long side sheets which have been extended down to the line of the bottom of the tender cistern, thus providing an enclosure to protect and conceal the inspirators, the cab appears to be very small. This is not the case, however, and there is plenty of room.

In addition to the usual throttle, reverse, and brake mechanisms, steam and air pressure gauges, there are indicators to show speed, cut-off, etc. The two wings of the "butter-fly" type fire-door operate independently, controlled by foot pedals. A series of toggle-switches above the engineer's seat control the lights, with the exception of the classification lamps which must be lighted from the front of the engine to avoid any chance of mistakes. The wiring from the cab to the generator and headlight is entirely concealed.

The windows at the front of the cab are much larger than usual due to the absence of doors in that location. There is no need for the fireman to climb out ahead to fix the bell or start the pump or pound the sand pipes so the doors are unnecessary. For emergency exits a foot hold and hand-rail on the side of the cab permits the passage of the crew to the front of the engine if necessary. This is another departure from conventional design which may be far-reaching in its effect.

Each of the front cab windows is fitted with a deep sun visor and an electrically operated wiper to remove rain or snow. The side windows of the cab are equipped with wind deflectors for the protection of the crew.

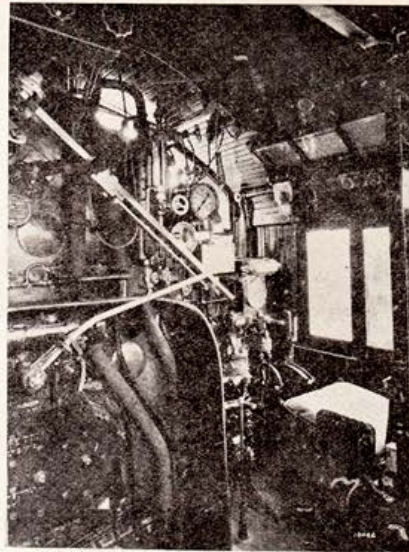
The neat appearance of the locomotive is due to a considerable extent to the long low lines of the tender which holds coal enough to heat a good sized house during a cold winter, and water enough to last one person a long time if used at the rate it used to be passed out in the Navy! The capacity of the tender, 11,000 gallons of water and fourteen tons of coal, has been found necessary for this run. Storage space for tools, clothing, etc., is provided in lockers built into the tender.

Of course "the 652" has an air operated whistle and cylinder cocks, (three to each cylinder)

metallic steam heat connections, train control, "Type E" superheater and a power reverse gear, these features being standard on modern power.

The locomotive is classed as Pacific Type (4-6-2 wheel arrangement) and measures 87 feet over the couplers.

Although the grate area is eighty-seven square feet the fire-box is less than ten feet long, although nine feet wide, so that hand-firing is readily possible and it is expected that she will steam freely when adjusted to her run.



Inside View of the Cab

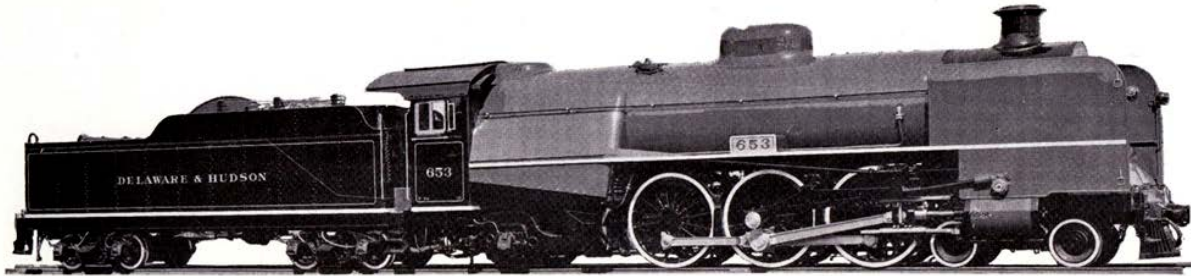
With a boiler pressure of 260 pounds per square inch, 22 x 28 inch cylinders and 73 inch driving wheels, a tractive effort of 41,600 pounds is developed. The weight of engine and tender loaded is 444,000 pounds and her factor of adhesion is 4.45 which is approximately the same as for the "600" class. The tractive effort can be increased if desired, the cylinders having been bushed with provision for using larger pistons if this should prove desirable in the future.

Following her inspection at Colonie on May 14th, the locomotive was moved to Albany where it was placed on public exhibition. Many favorable comments were made both by railroad people and others who availed themselves of this opportunity to inspect this latest addition to our passenger fleet.

**No. 653:**

--built by the D&H in 1931, 4-6-2

Here is the official debut portrait of *No. 653* as shown in the *1936 Inspection of Lines*, p. 26:



LOCOMOTIVE 653

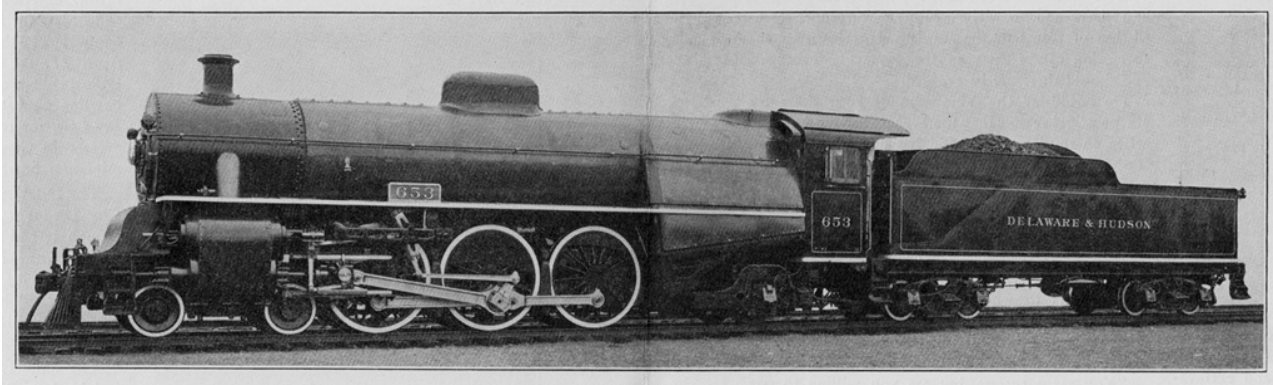
Built by The Delaware and Hudson Railroad Corporation in 1931. Type 4-6-2. Gauge of Track 4'8½". Cylinders, Diameter 22", Stroke 32". Driving Wheel Diameter 73". Boiler, Straight Top. Inside Diameter 74-9/16". Pressure 325 Pounds. Fire Box, Length 116-1/16", Width 107⅞". Tubes, Superheater 142. Diameter 3½", Length 19'7", Ordinary 34, Diameter 2¼", Length 19'7". Wheel Base, Driving 13'0", Engine 35'3½", Engine and Tender 74'8½". Weight, on Engine Truck 50500 Pounds, Drivers 191000 Pounds, Trailer 55000 Pounds, Total Engine 296500 Pounds, Engine and Tender 457000 Pounds. Fuel, Anthracite and Bituminous. Heating Surface: Tubes 2925, Fire Box 246, Arch Tubes 37, Total 3208 Square Feet, Superheater 1495 Square Feet. Tractive Power 59500 Pounds. Tender Capacity, Water 11000 Gallons, Fuel 14 Tons. Equipped with Rotary Type Poppet Valves.



No. 653 is featured on the front cover of *The Delaware and Hudson Railroad Bulletin*, May 15, 1931, and in an article therein titled: "Heads Our International Passenger Power / Uniflow Valves and Increased Steam Pressure Among Features of New Locomotive," *The Delaware and Hudson Company Bulletin*, pp. 152-153. 156.



**"Heads Our International Passenger Power /** Uniflow Valves and Increased Steam Pressure Among Features of New Locomotive," *The Delaware and Hudson Company Bulletin*, May 15, 1931, pp. 152-153. 156.

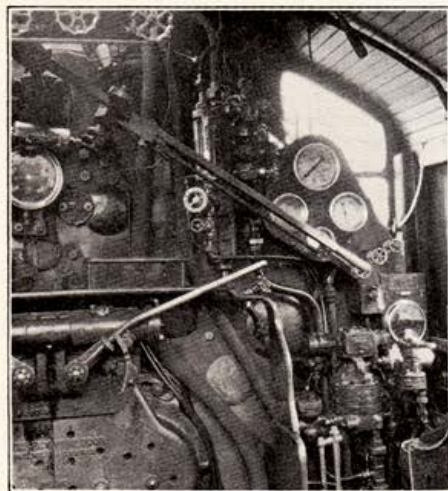


A NEW queen now rules the Delaware and Hudson's passenger fleet as it speeds along the route of the Montreal Limited. Deposing locomotive 651, as the latter in its turn displaced number 652, pioneer in this class of power, "the 653," just completed at our Colonie shops, now heads the list.

In general appearance the newcomer resembles her sisters of the 650-class. The tenders with their capacity of 14 tons of coal and 11,000 gallons of water, are identical in design and built long and low. Streamlining has been continued as in the previous designs, the headlight, sandboxes, bell, whistle, safety valves, and all piping being concealed so that only the stack and dome-casing appear above the level of the boiler top.

Two features particularly distinguish the new engine: cylinder castings of a modified uniflow design and a boiler which, although of the usual staybolted construction, carries a pressure of 325 pounds per square inch.

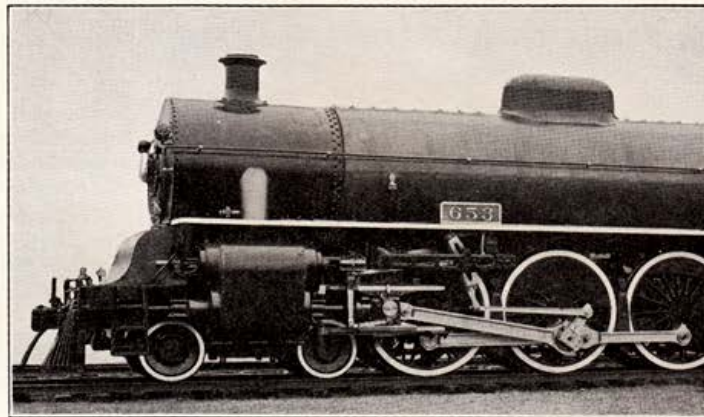
For experimental purposes each of the three locomotives of this series has been equipped with



Grouping of Controls and Gauges

## Heads Our International

*Uniflow Valves and Increased Steam Pressure*



a different type of valve, each being actuated by a Walschaert gear of the conventional type. Locomotive 652, the first of the three to be built, has the customary piston valve. The second engine, Number 651, has an installation of the Dabeg Poppet Valve, which is being used quite extensively in Europe.

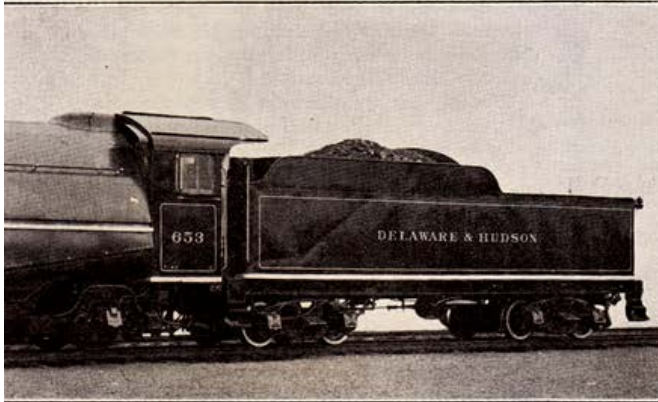
"The 653" has a modification of the Uniflow system incorporated in the design of its cylinders and valves. A double piston valve operates to admit steam at the ends of the cylinders in the usual manner. A series of ports in the cylinder barrel when uncovered by the movement of the pistons and valves, controls the exhaust of the steam in such a manner that the cylinders are maintained at a higher temperature than in the conventional locomotive, thus reducing condensation losses. The use of a Type E superheater, as on other locomotives of this class, is expected to add to the effectiveness of the valve arrangement.

Further increased efficiency results from the use of a steam pressure of 325 pounds per square inch instead of the usual 200 to 250 pounds. This added considerably to the problem of designing both a boiler and running gear capable of withstanding the stresses set up. The boiler, of the radial-stayed type, has a fire-box nine feet, eight inches



# al Passenger Power

*Among Features of New Locomotive*



long and nine feet wide, constructed of fire-box steel. Nickel steel is used for the roof- and barrel-sheets and dome-liner. As an additional safety measure a low-water alarm is provided.

Upon entering the cylinders the steam exerts a total pressure of over 60 tons on the piston so that the latter, together with crossheads, rods, wheels, axles, frames, etc., must be built rugged enough to stand the strain. High tensile strength steel was used to the greatest possible extent but the size of parts had, nevertheless, to be increased to such a point that the weight on the engine truck and driving wheels presented another problem.

Hollow-bored driving axles and the use of aluminum for the cab, main air reservoir and driver brake cylinders resulted. Special light-weight grates and running boards were also used in order to reduce the total poundage.

Another unusual feature is the extension of the piston rods through the front cylinder heads in order to equalize the total pressure on the front and back of the piston. With ordinary boiler pressures this inequality is overlooked. In the case of "the 653" it would amount to a matter of some two tons at full throttle, resulting in unsatisfactory operation. The rod extensions also carry the weight of the piston heads thus reducing packing ring wear to a minimum. Valve stems

are extended through the front head of the valve chambers in accordance with Delaware and Hudson standard practice.

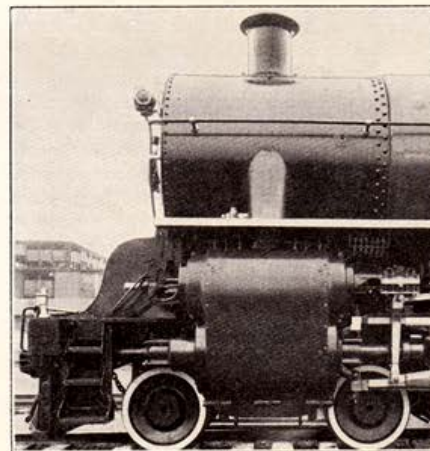
In the cab the various gauges have been assembled in a neat aluminum case somewhat similar to the automotive instrument board. Non-lifting injectors of conventional design supply water to the boiler as needed. In the event that, for any reason, the water level falls below a certain height an alarm whistle in the cab gives an unmistakable warning to the members of the crew. A Delaware and Hudson standard throttle valve is used.

The deep-throated steam chime whistle is operated by the pressure of a finger on an air valve convenient to the engineer. Similar valves operate sanders and also the pneumatic bell-ringer which is located below the pilot beam.

Wiring for the headlight and classification lights is concealed.

Another feature is the use of illuminated numerals on the side of the locomotive. Electric lights behind the glass to which the nickel numbers are secured render identification of the unit a simple matter at all times. The nickel-plated frames around the number boxes, together with the highly

(Concluded on page 156)



Uniflow Cylinders and Valves



*New Passenger Power*  
(Continued from page 153)

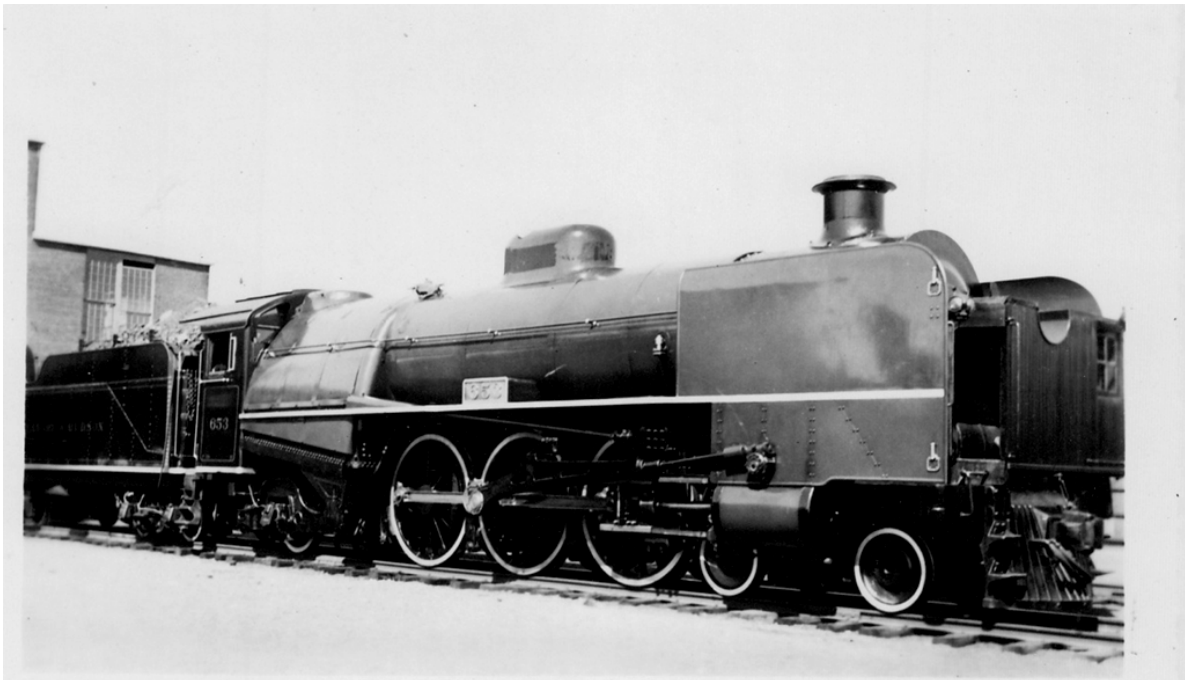
polished steel of the rods and valve-motion parts, stands out in striking contrast to the jet black finish of the sleek machine.

A sixteen-feed mechanical lubricator supplies oil to the valves, cylinders, and air pump, while a pendulum type flange oiler is provided to reduce flange wear on the front pair of driving wheels.

Two years' experience with previous locomotives of this and other classes continues to indicate the wisdom of locating the cross-compound air pump, power reverse gear and generator between the frames, thus helping to lower the center of gravity of the engine.

The overall length of locomotive and tender is 87 feet. With 24 x 32 inch cylinders, 73-inch drivers, and 325 pounds pressure, it is conservatively rated at 43,000 pounds tractive effort.

Here is another photo of *No. 653*, at Colonie in 1937, that is in the archives of the Carbondale Historical Society.



*D&H No. 653*

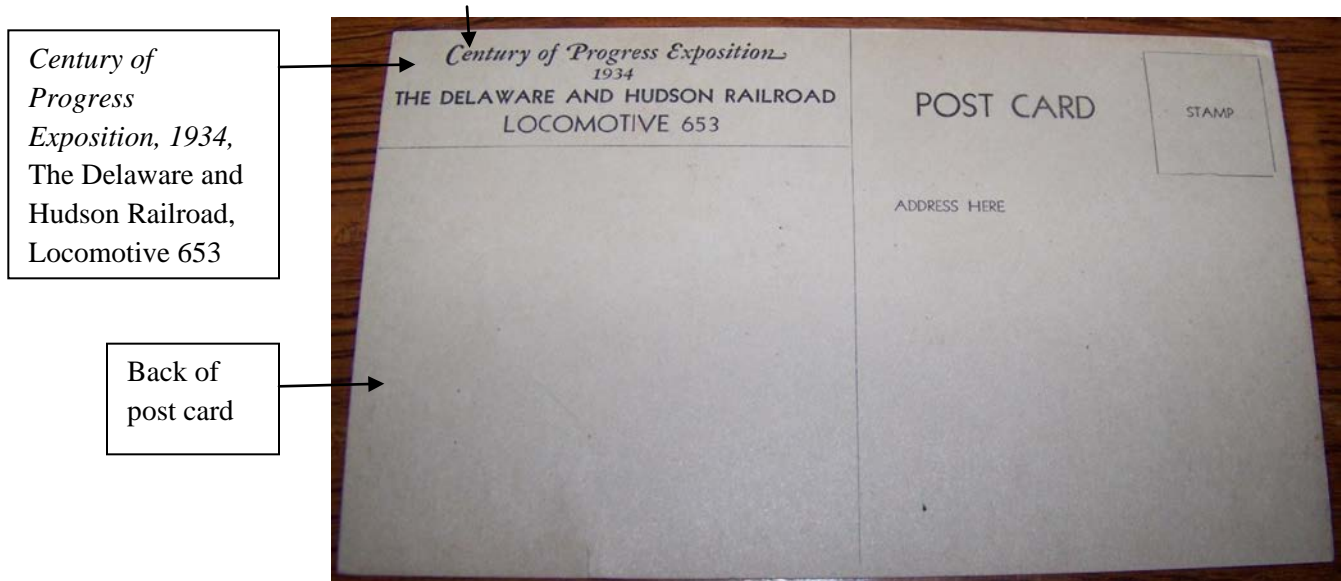
Photo of No. 653 in Alan G. Dustin collection at the Carbondale D&H Transportation Museum.



On May 5, 2016, we learned from John V. Buberniak that No. 653 was in the *Century of Progress Exposition* in Chicago in 1934:

Front of post  
card photograph  
of No. 653 that  
was offered for  
sale on E-Bay in  
May 2016





### The Chicago World's Fair, 1933-1934



*A Century of Progress International Exposition* was a World's Fair held in Chicago, as *The Chicago World's Fair*, from May 27, 1933 to October 31, 1934, to celebrate the city's centennial. The theme of the fair was technological innovation. The fair's motto was "Science Finds, Industry Applies, Man Adapts"; its architectural symbol was the Sky Ride, a transporter bridge perpendicular to the shore on which one could ride from one side of the fair to the other.

Here is another look at No. 653, on the cover of the July 1, 1934 issue of *The Delaware and Hudson Railroad Bulletin*:





Locomotives Nos. 609, 653, and 1403 formed the focal point of the annual inspection trip of President Loree and the Board of Managers on June 8, 1934. Here is the two-page article about that trip that was published in the July 1, 1934 issue of *The Delaware and Hudson Railroad Bulletin*, pp. 104-105: "President and Board of Managers Make Annual Inspection Trip"

## President and Board of Managers

LOCOMOTIVES 609, 653, and 1403 formed the focal point of the annual inspection trip of PRESIDENT LOREE and the Board of Managers of The Delaware and Hudson Company over the railroad lines as the party arrived at Colonie, June 8th. Each noteworthy in its own right, the three huge machines together bespoke better than words PRESIDENT LOREE'S faith in the "Iron Horse" as the prime mover of the future as far as mass transportation is concerned.

Following its policy of trying out new ideas on separate locomotives, in order to avoid complications, and standardizing on only those of proven worth, The Delaware and Hudson has succeeded in developing motive power for both freight and passenger service that is second to none with regard to efficiency, performance, and appearance.

"The 609," described in detail in *The Bulletin* of April 1, 1934, is the first locomotive in the world to be equipped with self-aligning roller bearings in the main and side rods on the main crank pins. In addition, roller bearings have been applied in the driving boxes of the main axle, this idea having been originally found to be feasible as the result of an application made to Delaware and Hudson Locomotive 1071 in September, 1930. Frame renewals now being made on heavy passenger power provide for the application of roller bearings on the main driving axle in all cases.

Locomotive 1403, named *L. F. Loree*, is probably the most distinguished motive power unit in the world. Aside from being the only locomotive built in America in 1933, it is the world's first, four-cylinder, non-articulated, triple-expansion compound, in addition to which rotary cam type poppet valves are used to control the flow of steam, of 500 pounds boiler pressure, through the cylinders. (A complete description is given in *The Bulletin* of May 1, 1933.) Following its exhibition at the Chicago "Century of Progress" Exposition last year, "the 1403" is in freight service on the Susquehanna Division.

Replacing it at Chicago this year is Locomotive 653, the third of a series of experimental passenger pullers built at our Colonie Shops. The Uniflow cylinder and valve arrangement originally applied to this locomotive proved less economical than had

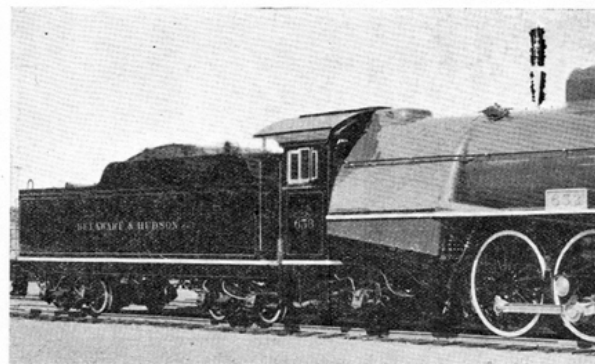
### Modern Motive Power on Display at

been expected so this equipment was replaced by cylinders fitted with Dabeg rotary cam type poppet valves. Separate valves control the admission and the exhaust of the steam for each end of each cylinder, thus allowing variation of the point of cut-off without changing all the other events in the



cycle as must be done when the usual piston valve is used as on the ordinary locomotives.

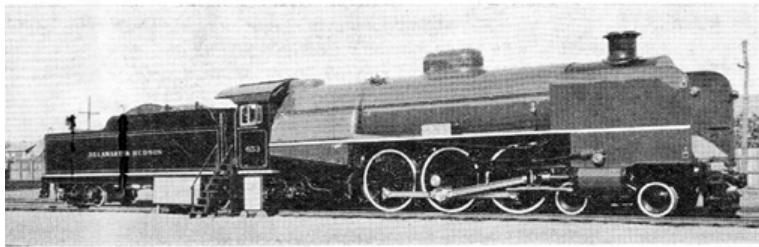
In order to insure clear vision for the crews of locomotives operating at low back pressures, various experiments have been carried on during the past year in an effort to lift the smoke and steam from the stack and keep it from swirling down around the boiler and cab. The most effective arrangement is that applied to "the 653," consisting of large rectangular plates fastened to the outside of the running boards at each side of the smokebox. A "slope sheet" rising on an angle from the pilot



# agers Make Annual Inspection Trip

on Display at Colonie Locomotive Shop

to the bottom of the smokebox, together with trap doors which let down over the steps from the breastbeam to the running boards, causes an upward current of air which rushes between the rectangular plates and the sides of the smokebox, carrying the smoke well above the locomotive and train as well.



Road tests have demonstrated the ability of Locomotive 653 to pull both heavy and light trains with marked economy. Concealment of the bell, air-compressor, reservoir and piping, as on other Delaware and Hudson power, gives "the 653" a very clean, business-like appearance which elicited favorable comment from members of the inspection party.

On the second day of the trip the party inspected the mines and furnaces of the Chateaugay Ore and Iron Company at Standish and Lyon Mountain.

At Standish the blast furnace, in which the ore

is converted into metallic iron by burning out the impurities, was "tapped" in the presence of the visitors, who watched the white-hot stream of molten metal flow into the ladle, whence it was poured into the pig-casting machine. This is an endless conveyor of cast iron moulds, mounted on wheels and traveling on an inclined track. A stream of hot water sprays on the hot metal which is thus solidified by the time it reaches the discharge end of the machine. The "pigs," blocks of iron weighing 65 pounds each, are discharged directly into railroad cars for transportation to market or to the storage yard.

Since the Chateaugay ore, as mined, contains 28 per cent iron, free from phosphorus and sulphur and, therefore, in great demand for the production of the finest grades of iron and steel, it is necessary to prepare the ore for the blast furnace. This is done at Lyon Mountain where, after milling and

concentrating, a product containing 69 per cent pure iron is obtained.

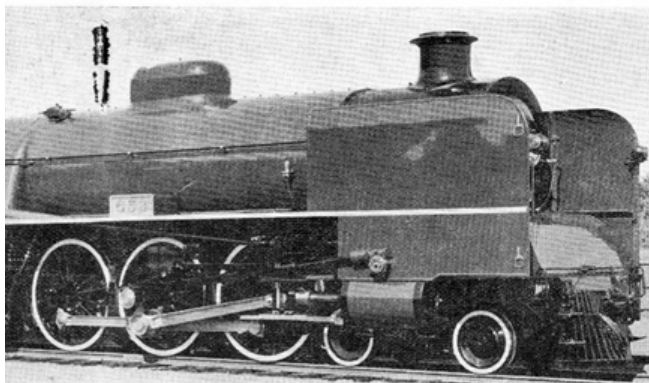
As it comes from the mine, the ore is in lumps up to eight inches through. Crushers, vibrating sifters and conveyors prepare it to pass through inch square openings. It is then freed of moisture in a dryer stack 125 feet high. It then passes through electro-magnetic separators which discard all material containing less than 6 per cent iron.

The rock which has been separated from the ore during the above process is called ore tailings and is very valuable for concrete construction and ballasting railroad tracks.

The inspection party spent considerable time going through the modern ore reduction and sintering plant at Lyon Mountain, where samples of the various produces and the different kinds of tools and machinery used in the mining and preparation of the ore for market were on display.

A more detailed account of the iron mining and refining operations will appear in a later issue of *The Bulletin*.

Among those making the trip with PRESIDENT LOREE were the following: I. Hasbrouck Chahoon, William A. Anderson, F. E. Williamson, President of the New York Central Railroad, F. D. Underwood, former President of the Erie Railroad, M. W. Clement, Vice-President of the Pennsylvania Railroad, A. J. Singer, Ira Perkins, and the staffs of the President and Vice-President.



### Smoke Deflectors:

“Smoke deflectors were installed on eight Pacifics [1934-1935] giving them a distinctive appearance that was the hallmark of D&H locomotives for the remaining years of steam.” (*Shaughnessy*, p. 315)

In 1931, *No. 653* was christened. *No. 653* was re-christened three years later with "elephant ear" smoke lifters and a sloping plate running up from the pilot, which created an updraft of air when the engine was in motion, lifting the smoke higher than the force of the exhaust itself could push it, to keep it from obscuring the engineer's vision. *No. 653* was the first engine to have these smoke lifters. Smoke lifters (elephant ears and the front sloping plate) were also installed on *No. 606* and others.

Steven Brown, Delaware and Hudson Railroad group, on *Facebook*, on November 13, 2015, posted this photograph, with the caption given below:



“Delaware & Hudson locomotive number 301 (Alco, K-62 Northern, 4-8-4) photographed in 1948 near Richmondville. Locomotive 301 in the lead followed by a 4-6-6-4 Challenger drag a 92-car train up Richmondville Hill.”

That photograph (preceding page) elicited the following comments on *Facebook*:

1. **Gerard O'Donnell:** "The 'elephant ears' were used with a specially designed pilot profile to create a scoop effect to lift the smoke upwards at speed. Some designs used an actual wind scoop device attached to the pilot, while most used a gently sloping pilot sheet such as the one in the picture. As advances were made in obtaining finer valve timing (cutoff) control to gain efficiency, the back pressure and velocity of the exhaust up the stack was lowered, and some roads employed these 'smoke lifters' to aid in keeping exhaust up away from the cab."

2. **Michael Eggleston:** "Gerard, they were designed to life the smoke up and away from the view of the head crew while the train was moving at speed. They were first used on the D&H 4-6-2 Pacifics during the reign of D&H President L. F. Loree who saw the practical use of them on British steam locomotives. Loree was still president when the K-62s were ordered and the practice was continued by Joseph Nuelle who succeeded Loree."

3. **Silas Robert Powell:** "D&H No. 653, which was christened in 1931, was re-christened three years later with 'elephant ear' smoke lifters and a sloping plate running up from the pilot, which created an updraft of air when the engine was in motion, lifting the smoke higher than the force of the exhaust itself could push it, to keep it from obscuring the engineer's vision. No. 653 was the first D&H engine to have these smoke lifters. Locomotives 653, 609, and 1403 formed the focal point of the annual inspection trip of President Loree and the Board of Managers on June 8, 1934."

4. **Greg Flynn:** "Those three engines all represented significant points of Loree's experimental period on the D&H."



**No. 713:**

Photograph of No. 713 in the collection of the Carbondale D&H Transportation Museum.



*D&H No. 713*

**No. 888:**

This photograph of D&H 888 was offered for sale on E-Bay on April 7, 2016. Thanks to John V. Buberniak for bringing this item to our attention.





Two detail views of *No. 888*:



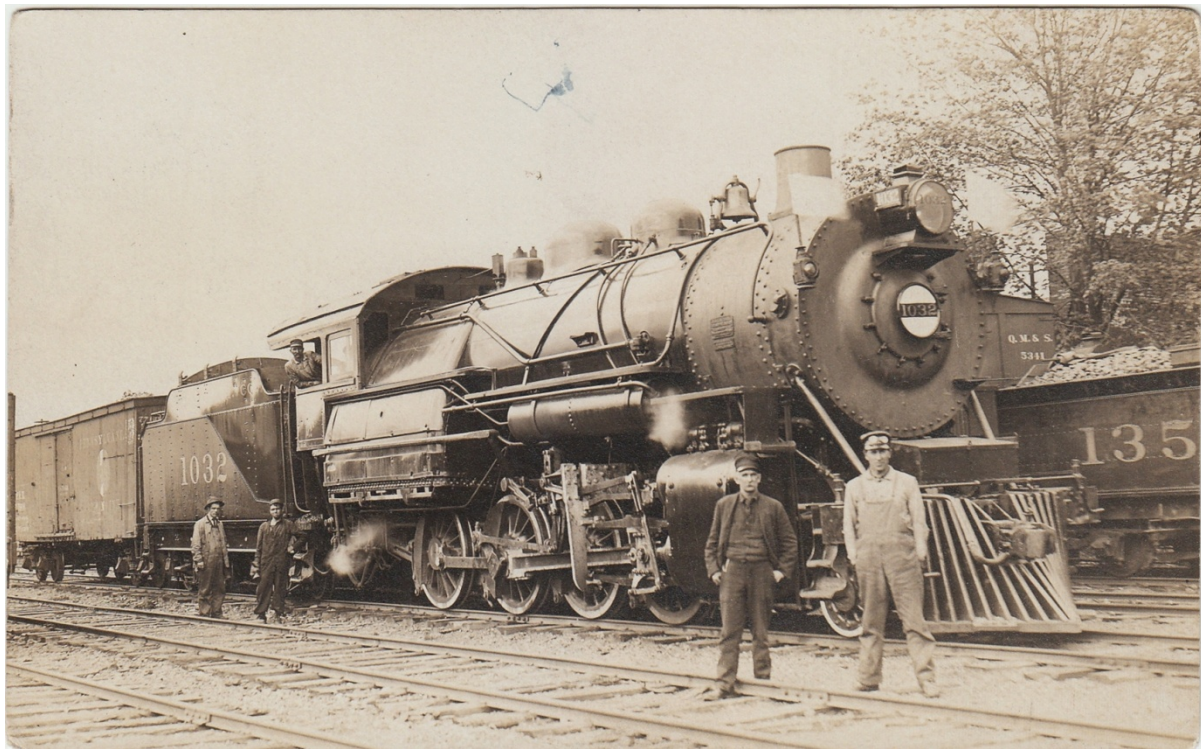
Two detail views of No. 888:





**No. 1032:**

D&H No. 1032, built by ALCo in 1908 and scrapped in May 1947. On July 7, 1990, Joseph Muia, Carbondale, said that this photograph was taken at Oneonta, NY. Post card in the collection of the Carbondale Historical Society.



*D&H No. 1032*

**No. 1214:**

Photograph of *No. 1214* in Carbondale in 1951, made available for the present work by John V. Buberniak on November 23, 2015. The Carbondale D&H Seventh Avenue station is seen at the far right in this photograph.

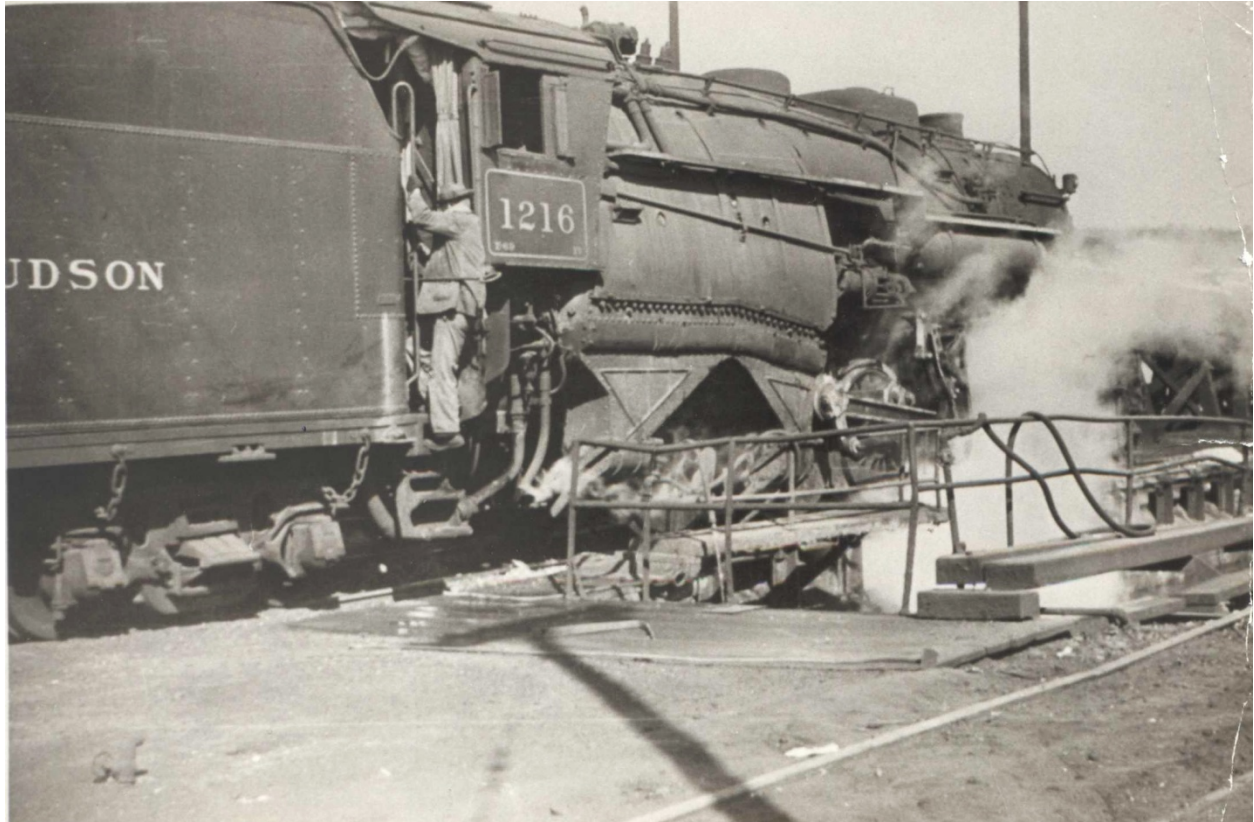


Locomotive No. 1214, a 2-8-0, photo dated 1951, engine shown here in Carbondale. Built by ALCo/Schenectady Works, in 1918. ALCo note: ALCo closed in 1969; most of the buildings have been torn down and the site, as of 2016, is to be developed into River's Casino and Harbor.



**No. 1216:**

*D&H Engine 1216.* Photograph in the collection of the Carbondale Historical Society

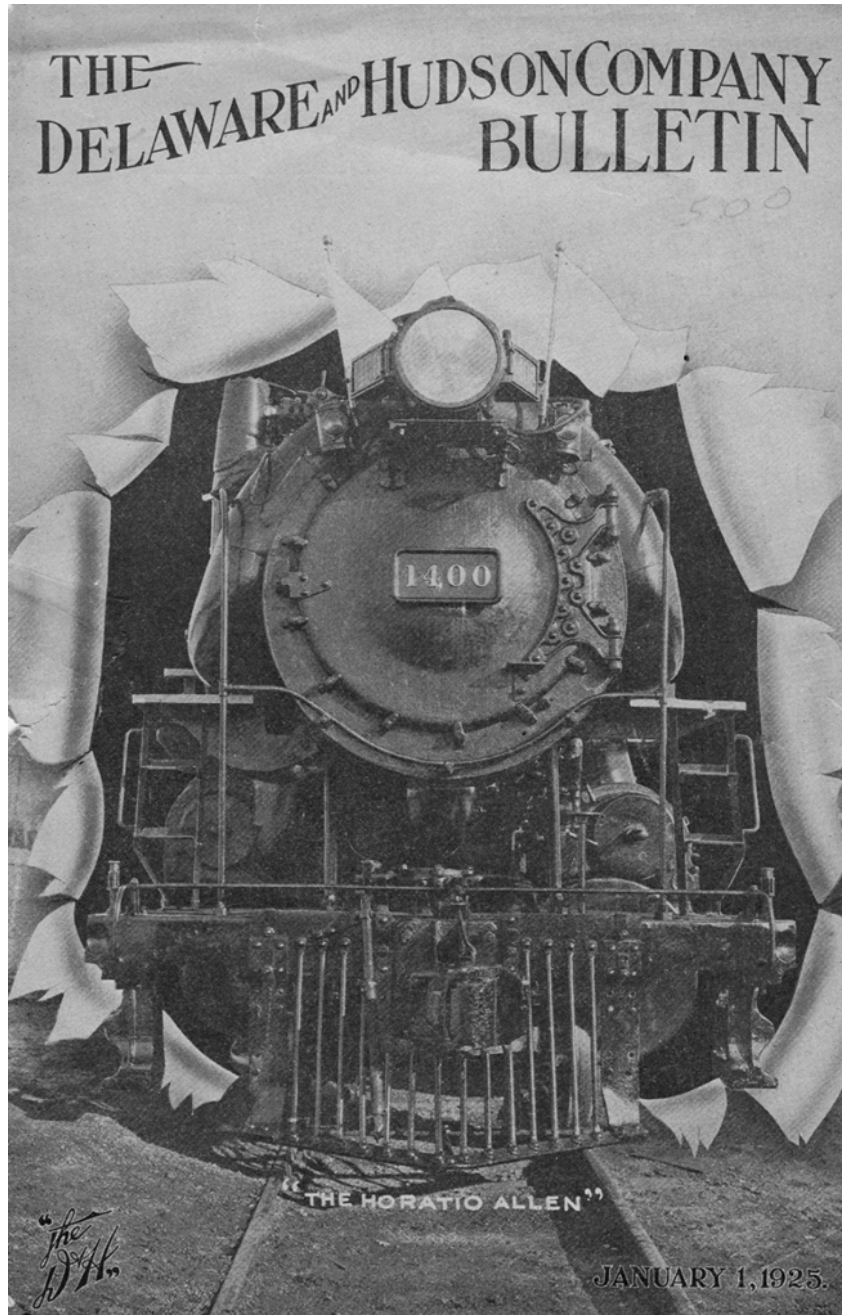


*D&H Engine 1216*

**No. 1400:**

--the *Horatio Allen*: designed by John E. Muhlfeld; christened December 4, 1924; ran for only 171,838 miles

The *Horatio Allen* is the cover photo of the January 1, 1925 issue of *The Delaware and Hudson Company Bulletin*.





Articles about the *Horatio Allen* are the primary content of the January 1, 1925 issue of *The Delaware and Hudson Company Bulletin*, as follows:

*The Delaware and Hudson Company Bulletin*

## The "Horatio Allen" No. 1400

*New Giant of the Rails is Christened in Honor of the Man Who  
Became the First Locomotive Engineer in This Country*

**H**ORATIO ALLEN, the man who was at the throttle of the "Stourbridge Lion," the first locomotive to turn a wheel on this continent, on its initial trip at Honesdale, Pa., on August 8, 1829, and therefore became the first locomotive engineer in this country, lived again in the thoughts of 150 prominent railroad men from various neighboring lines and from our official family who were present at our Colonie shops on Thursday, December 4, when a new Delaware and Hudson locomotive, the No. 1400, was christened with his name. Allen, as our readers will recall, when but twenty-six years old, was sent to England by the Management of our Company, to purchase four locomotives. The "Stourbridge Lion" was one of these. It was highly fitting, therefore, that the Management, nearly a century later, should do honor to him after a custom prevailing during the years of his active railroad career, by imposing his name upon the cab of this new giant of the rails. Deeper interest than otherwise might have centered in this event was made possible by the presence, as sponsor, of Mrs. Harleston Corbett Lewis (Mrs. Russell D. Lewis), a granddaughter of Allen's.

Throughout the more formal exercises of the day, Allen was an outstanding figure. The son of a professor of mathematics at Union college, Schenectady, N. Y., and an engineer by profession, he was one of the first Americans to form a definite conviction that the railroad was to supply the transportation means of the future. It was while engaged as an engineer on the gravity road between Carbondale and Honesdale that he was delegated with his foreign mission.

Those who came to join with the Management in doing him honor, combined to make an auspicious gathering. Invitations had been extended not only to the presidents and superintendents of motive power of other rail systems, men of high rank in the supply business, representatives of leading railway publications and daily newspapers, and our own officials, but to a number of pensioned engineers and firemen who had seen unusually long service in the employ of the Com-



HORATIO ALLEN

pany. Among the latter who attended were JOHN H. STRANAHAN of Cherry Valley; GEORGE H. MEYERS of Saratoga Springs; MARTIN GULLY and Mrs. Gully of Whitehall, and JOHN T. HINES of Green Island, former locomotive engineers; and C. F. W. BRANDT of Schenectady, a retired locomotive fireman. A special train was operated between Albany and Colonie for the accommodation of the guests.

Shortly after the arrival of the party at Colonie and without great ceremony, Mrs. Lewis christened the "Horatio Allen," in a manner according to a prevailing custom. Then followed a casual inspection of the locomotive during which many questions pertaining to its construction and operation were answered by those familiar with its design. Such replies as were made could be based on facts for the locomotive already had made a creditable showing in trial trips over the Susquehanna division between Oneonta and Mechanicville under the supervision of G. S. EDMONDS, superintendent of motive power.

At 1 p. m., the guests assembled in an improvised dining hall at the shops where they were served with a tasty luncheon of bouillion, broiled chicken, creamed potatoes, new squash, Waldorf salad, rolls, apple pie and coffee prepared under the direction of J. T. HAYDEN, district passenger agent, who was ably assisted by a corps of dining car chefs and waiters. The more formal program of the day then followed.

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COLONEL J. T. LOREE, vice-president and general manager, as toastmaster, told his guests that the ceremonies had in view two purposes: First, to celebrate the placing in service of a type of steam locomotive heretofore unused, and, second, to do honor to the first engineer, so far as the operation of a steam locomotive in this country was concerned, Horatio Allen. Then, with the statement that it has always been the belief of the President of The Delaware and Hudson Company that steam locomotives could be designed and improved to perform their functions, he introduced PRESIDENT L. F. LOREE, who said:



## *President Loree Voices Faith in Future of Unit System of Transportation*

THIS occasion draws attention to two marked contrasts in the element of time. While the business of steam transportation is one of hazard, it is also one that appeals especially to men of active temperament and physical vigor. It is a pleasure to have here with us today men who have been on the payrolls of this Company for more than fifty years before retiring from active service to continue their relations as pensioners. On the other hand, we are faced with the startling youth of the industry itself when we realize that Horatio Allen came to this service in adult life with a training and an education that marked him among his fellows, and that today our ceremonies have been graced by Horatio Allen's granddaughter. A span of three generations embraces the entire history of steam transportation.

"When, more than a century past, The Delaware and Hudson Company secured its charter, a contest was arising between the rope haulage system of transportation and the independent unit system of transportation, and since that time the advantage has fluctuated, now with one and now with the other.

"When the Company built its railroad from Carbondale over the Moosic mountains to Honesdale, it used the rope haulage system on its twelve inclined planes. Over the so-called levels between the planes it moved its cars by the unit system; namely, horses, and, on descending grades of from forty-four to seventy-two and a half feet per mile, by gravity.

"At that time the steam locomotive was just being developed. On the recommendation of the chief engineer, John B. Jervis, the Company, with great courage, decided to test out that system of unit haulage. Horatio Allen, one of its engineers, was commissioned to go to England and contract for four locomotives. All of these were subsequently delivered on the Company's wharves at Kingston on the Hudson—one from the works of Robert Stephenson & Company, Newcastle, a company still in the business of manufacturing locomotives; the other three from the works of Foster, Rastrick & Company, of Stourbridge. One of these latter, the 'Stourbridge Lion,' was set up at Honesdale on the 8th of August, 1829, nearly two months before the celebrated Rainhill contest, and was operated by Horatio Allen, to whose name, character and professional ability we today do honor.

"The Liverpool and Manchester Railway early in 1829 employed James Walker of Limehouse,

a distinguished engineer, and J. U. Rastrick of Stourbridge, a locomotive builder to report on the respective merits of the locomotive engine and fixed engine. Their report was generally, although not very decidedly, in favor of the rope haulage system. It was with a view to meeting the wishes of George Stephenson, their chief engineer, and to give the locomotive one more chance, so to speak, that the Company resolved to invite a competition for a prize of £500. The conditions were advertised in April, 1829, and the trial taking place in October, 1829. It was, as is well known, won by the 'Rocket,' the nineteenth locomotive built by the firm of Robert Stephenson & Company. The name 'Rocket,' by the way, grew out of a lawyer's sarcastic remark that 'People would as soon mount one of Colonel Congreve's rockets as one of these railway coaches.' George Stephenson was not the man to dodge anyone's attack.

"The success of the 'Rocket' was due to the combination of the tubular boiler suggested by Henry Booth, and an improved and suitably proportioned blast pipe, first used by Richard Trevithick in his original locomotive which had its first trial on Christmas Eve, 1801. The success of the 'Rocket' at Rainhill led to the rapid introduction of the unit system of haulage in all parts of the world, and it remains today the outstanding instrument of transportation.

"This is not the place to recount the service of steam railways to mankind. It is enough to suggest that they were the indispensable condition of the abolition of slavery and equally the means by which famines have been abolished. They made of a primitive agriculture a world commerce, they broadened in every way the comfort and security of life. They have made the civilized lands the mother countries of the world.

"On July 27, 1884, electricity was applied in the movement of street cars at Cleveland, Ohio, and came rapidly into use. This is, in essence, a rope haulage system. There is the great central power station; the dynamo, standing for the winding drum; and the trolley wire providing the circuit for the electric current, attaching to which the vehicle is drawn along. This system was so superior that it drove the individual unit system—the horse-drawn car—out of service and completely supplanted it in city and suburban transit.

"About 1898, with the application of the internal combustion engine to road vehicles, there began the development of the automobile. In



its turn this individual transportation unit, whether used as a pleasure car, as a motor bus, or as a motor truck, has rapidly driven the suburban trolley lines and the city lines of meager traffic out of service, they being no longer able to preserve their financial solvency.

"There is the further possibility that even tomorrow a cheap, durable and fool-proof electric storage battery may be invented, enabling the use of its power by an independent unit in transportation, completing the discomfiture of the rope-haulage trolley car.

"While this contest may be expected to continue long in the future, perhaps usurping and stabilizing itself in restricted fields, the dominance in its larger aspect will depend largely upon the ability, genius, courage and tenacity of the exponents of one or the other method of transportation. For myself, I have an abiding faith that for the main purposes of the railroad—the transportation over long distances of heavy articles—the unit system of transportation will be the dominant one.

"The engine which has today been christened the 'Horatio Allen,' in honor of the man who ran the first locomotive on the Western hemisphere, is a step in the direction of insuring this position. The familiar self-contained type of multitubular boiler for steam locomotives, in combination with the superheater, has been retained. Instead of the usual water leg firebox with its undesirable flat sheets and staybolts, and the sluggish circulation of water, the firebox of the 'Horatio Allen' has been built up of self-supporting cylindrical structures. These are in the form of drums and tubes disposed horizontally and disposed vertically, requiring no stays, which are directly exposed to the furnace heat and which not only 'split up' the boiler water into small streams but also provide for its rapid circulation, thereby enabling quick absorption of heat and release of the steam bubbles.

"When water is burst into steam it expands to 1700 times its original volume. It is this high expansive force and the inverted ratio of its pressure to the space it occupies that we utilize in the locomotive engine. In working steam expansively the extent of the application depends mainly on the destiny and pressure of the steam drawn from the boiler.

"Liquid water, not under pressure, may be raised from melting to boiling point with no more than 180 units of heat, called 'sensible heat.' But its peculiarity is that it cannot be made to burst into steam until 970 more additional heat units have been added. This is called 'latent heat of evaporation,' and its production multiplies the cost almost five and a half times.

"This is the great cost in producing steam, whether of high pressure or of no pressure at all. It requires comparatively little additional heat

to put steam under pressure. Thus, it takes about 1,150 heat units to raise water into steam at no pressure. But to raise it to 200 pounds pressure—which is now the general locomotive practice—requires only about forty-nine additional heat units. To further raise it to 350 pounds, and thus secure seventy-five per cent more power, requires less than seven and a half additional heat units. It is this new pressure of 350 pounds that will be carried by the 'Horatio Allen;' and it is the economy of producing additional power by raising the pressure of the steam that this locomotive will realize.

"To make this possible, the pressure-containing parts of the boiler, superheater, cylinders, piping and other connections have been correspondingly strengthened. In fact, a higher factor of safety has been used than is ordinarily provided.

"In order to limit to the lowest terms the problems involved, we have taken the most popular of our Consolidation locomotives. We have made no material changes other than those indicated, except that the steam is used twice, i. e., it is expanded in a high pressure cylinder on the right side, then exhausted into a receiver, and expanded a second time in the low pressure cylinder on the left side, before it is exhausted into the stack. By this means the steam is more fully utilized before it leaves the cylinders.

"In the construction of this locomotive a small auxiliary engine, known as a 'booster,' has been attached to the tender. This device enables great concentration of power in starting the train and in moving it over comparatively short stretches of heavy grade. It is hoped that the 'Horatio Allen' will develop one-third more haulage capacity, with one-third less consumption of fuel and water, than the corresponding Consolidation locomotive. If these results are realized they mark a substantial advance in the efficiency of the unit system of transportation. Notwithstanding the greater heat in the boiler, the precautions taken in lagging its head will, we believe, reduce the temperature to which the engine crew is exposed.

"In the conditions of employment since the beginning of railroading, while the fireman has not been without benefit, there has, I think, inured to him a lesser proportion than to his associates. It is not the least of the merits of this design that for the same result his labor of coal handling will be lessened by more than one-third.

"The 'Horatio Allen' is today what the locomotive was when Zerah Colburn described it in the middle of the last century—a combination of three distinct arrangements. The source of power lies in the boiler and firebox; the cylinders, valves, pistons and the connections are the means by which the power is applied to produce motion

within the machine; and the wheels, by means of their adhesion to the rails, enable the exertion of the tractive force, securing the locomotion of the machinery which impels them, and from their surplus power above what is necessary to move the locomotive alone, to haul also the great load behind it upon the rails.

"The 'Horatio Allen' epitomizes the relations of the three elements of that industrial organization which distinguishes our civilization from all that have preceded it. There have been many definitions of truth. The one that seems to me most adequate is that 'truth is things seen in relation.' Complex as are the relations of management, capital and labor in the wide expanse of industrial organization, I am confident that if we look steadily and clearly we can mark them out and define them. If we can see them, we shall see the truth and the truth shall make us free.

"This locomotive is a creation of management. The conception of the plan is basic, fundamental; and it is the organization, energy and direction of management that have given it effect.

"This locomotive is a depository of capital. It is a characteristic of wealth that its owners

are in possession of real opportunities of consumption for speedy enjoyment, or of reservation for future enjoyment, or of employment for purposes of production. It is wealth that is reserved and applied to production under the direction of management that is generally called Capital, and this reservation demands on the part of the owner great sacrifice and force of character.

"But the 'Horatio Allen,' fine an example as it is of the art, striking as it is in its combination of management and capital, is a dead thing except in the hands of labor. He who looks with discerning eye to the contribution of labor, will fix his attention not on the output of physical energy, which in comparison with the power of this giant machine is but a feeble emanation, but rather on qualities far more ennobling—the complete discipline, the cheerful devotion to duty, the service carried on under every adverse circumstance, whether in wind and storms of rain and snow, or in fog, in the blackness of night or the beauty of the day; the high intelligence brought to the safeguarding, as well as the handling, of the movements entrusted to the charge of the locomotive's crew."



## Designer of the "Horatio Allen" Tells of its Many Possibilities

IT was a pleasure to COLONEL LOREE and his guests as well, that he was able to introduce the engineer who designed the "Horatio Allen," J. E. Muhlfeld. Delving for the moment into historical data, Mr. Muhlfeld said in beginning:

"The Delaware and Hudson Canal Company was the first to commercially recognize steam locomotive power on the American Continent and to actually put a steam locomotive on American soil. The 'Stourbridge Lion,' which had been ordered by Horatio Allen from the Foster Rastick and Company's works of Stourbridge, England, reached the wharf of the West Point Foundry Works, foot of Beach street, New York City, on board the vessel 'John Jay,' on May 17, 1829, and after a short stay in New York was shipped up the North river to Rondout, N. Y., and thence by the Delaware and Hudson canal to Honesdale, Pa., and immediately set up by Allen. It was mounted on four wheels. In general appearance it looked like a gigantic grasshopper and weighed seven instead of three tons as had been agreed upon when ordered.

"The track of the Honesdale coal road consisted of six by twelve-inch stringers of hemlock, to which were spiked bars of one-half by three and a quarter-inch rolled iron, the stringers being supported on timber caps spaced about ten feet from center to center. The trestles were slender and the curves sharp.

"The 'Stourbridge Lion' was standing on the track 'smoking and hissing,' apparently anxious to distinguish itself. Allen was begged not to trust his life to the chance of the comparatively weak track and trestles holding up so monstrous a mass of wood, iron and steam. But Allen was lusty, courageous and ambitious, and, determined to see what the 'Lion' would do, alone on the engine, without any tonnage, he pulled the throttle valve wide open and let her go 'lickety split' around the curve, over the swaying trestle and out of sight of the cheering but apprehensive crowd.

"Shortly after the trial of the 'Stourbridge Lion,' Allen was engaged as chief engineer of the South Carolina road for which locomotives designed by him were built by the West Point

foundry. He put his 'South Carolina,' the first double-end and the first eight wheel type locomotive in the world into use on that road in 1831. When running at night, Allen would place an open platform car ahead of the locomotive, this car being loaded with sand on which pine knots were burned to light the road ahead.

"Such were the experiences of Horatio Allen and of other of his colleagues—Ross Winans, Peter Cooper, George W. Johnson, James Milholland, Phineas Davis, Stacey Costell, Ezekiel Child, William T. James, and a long successive line of designers, engineers and builders, who had to do with the first use of steam motive power on the American railroads."

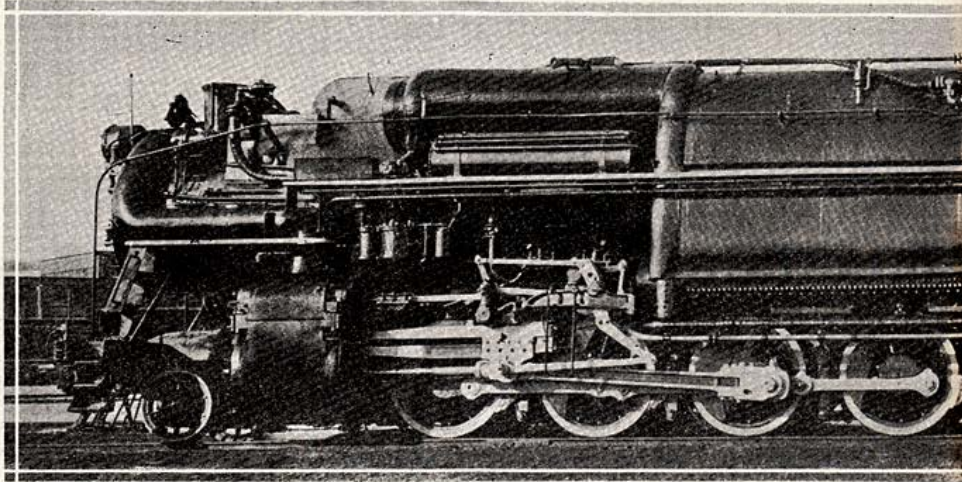
He then reviewed considerable data which reflected the deep and continued interest displayed and also the progressive action taken by PRESIDENT LOREE in improving the steam locomotive and steam road conditions in general. Thus he lead up to a general review of how the steam locomotives have been serving the country during the past fifteen years and, in explanation said:

"Comparing 1922 with 1907, while there was an increase of only 24 per cent in the total number of locomotives, there was an average increase of 44 per cent in their hauling capacity, due to average greater size and improved design and equipment. Furthermore, in combination with rectification of grades, larger cars and like factors, this 44 per cent increase in motive power moved an average of 70 per cent more revenue tons per freight train, and about 45 per cent more total freight ton miles, this being accomplished with a decrease of about 13.5 per cent in freight train mileage.

"It may be asked, why, with all these improvements in roadway, equipment and operation, did the operating ratio increase from 67.5 to 79.5 per cent, or about 18 per cent? The answer is, mainly through the revenue freight rate not having been increased to offset the greater cost of labor, materials and supplies, the principal item, after wages, being locomotive fuel.

"With regard to the locomotive fuel item, those costs went up about 160 per cent during the same period, or from approximately 200 to 518





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million dollars, the latter representing 127,213,345 tons of fuel consumed in 1922. In the New England district the cost for this fuel, in 1922, averaged \$6.35, and for the entire United States, \$3.94 per ton. Likewise, in 1922 it required, in the United States, an average of 163 pounds of fuel per 1,000 gross ton miles, and in New England, where the cost is the highest, this averaged 180 pounds.

"As it now stands, the locomotive fuel bill is about equal to the total money that is paid in wages to engineers, firemen, shopmen, and engine-house men engaged in the operation and upkeep of the locomotive equipment. Therefore, if freight rates are to be lowered, the locomotive fuel bill, which now represents considerably over one-half billion dollars per annum and about 12 per cent of the total steam railway operating expense is one of the large items that must be reduced, as any decrease in rates will have to be accomplished largely through an increase in the revenue freight train load and a reduction in the fuel consumption per 1,000 gross ton miles.

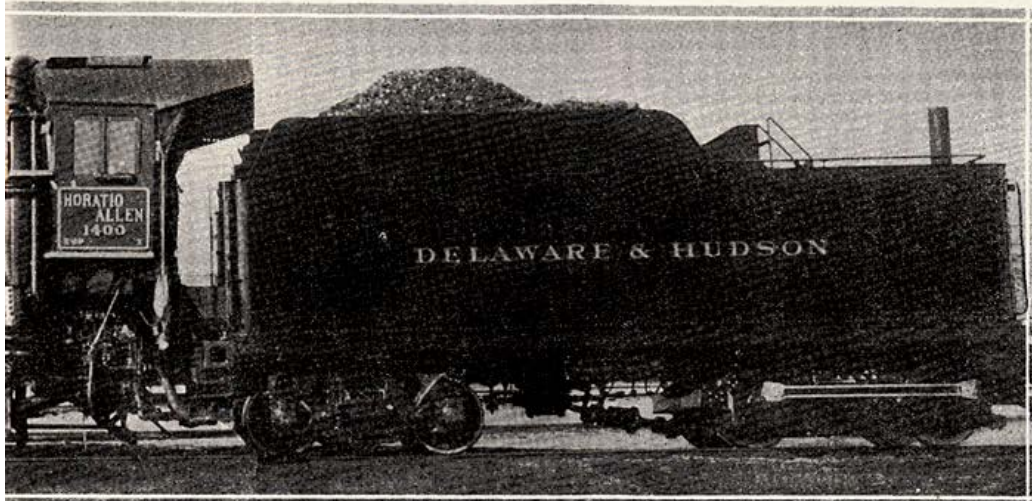
"Locomotives today must be designed, equipped and operated not only consistently, but economically. We must provide adequate starting power to readily get the trains out of the yard or siding without jerking; sufficient accelerating power to bring them quickly up to running speeds, plenty of sustained boiler and engine horsepower to keep them moving and reserve power to negotiate the ruling pulls. Likewise, the means for reducing speed and stopping is just as important.

"It is for these reasons that I favor a design of locomotive such as the 'Horatio Allen,' with plenty of 'pep' and reserve boiler and engine capacity that can be utilized for either starting, accelerating, or road running. An engineer always likes to have something 'up his sleeve' that will make him feel comfortable, when it comes to bad rail or weather, a hard start or pull, or a long continuous run, so that he can handle his train under all of these conditions, and know that the dispatcher can depend upon him to do so. The fireman also likes to know that the boiler has some reserve capacity so that when any little thing goes 'fluey' about the water level, pumping, quality of fuel, fuelbed, draft or firing, it isn't going to knock the boiler out of steam.

"The factor of upkeep is also a big one. Locomotives today must continue to move—not over a single division, but continuously over any number of divisions. The 'one-hundred-mile run' and then a cleaning, rest and repair period, is rapidly passing. It does not work in with the Transportation Act and the public demand for quicker traffic movement and lower passenger and freight rates. Therefore, the working, running and wearing parts must be designed with a higher factor of safety and made as simple, integral and sturdy as practicable so that they will not require constant attention, adjustment or repairs. Furthermore, all of the parts, especially those in contact with steam and water, should be made more accessible for inspection, testing and maintenance.

"Another thing that I have always felt most





"HORATIO ALLEN"

essential is to make the cab and tender arrangement as comfortable as practicable for the engineer and fireman, by locating and arranging the equipment they must continually handle in convenient positions. With the large steam locomotive this has become quite some job.

"There is nothing unusual in the 'Horatio Allen.' It has been designed to determine what can be accomplished in the better production and utilization of fuel heat and by means of higher steam pressure and the greater use of its expansive properties, in combination with the development of maximum hauling power in the most simplified form of a modern steam locomotive, consisting of two cylinders and four pairs of driving wheels.

"To illustrate: Assume that to convert a certain amount of water into steam at 200 pounds pressure, 1,199.2 pounds of coal must be used. To increase the 200 pounds pressure to 350 pounds, only 74 pounds more coal must be used and this increase of less than 6.2 per cent in fuel gives an increase of 150 pounds, or 75 per cent, in power. Then instead of using the steam of 350 pounds pressure direct from the boiler, in both the right and left cylinders and exhausting it out of the stack, it is first used in the right and again in the left cylinder, and by this double expansion process the heat that has been put into the steam is more effectively utilized before it is exhausted to the atmosphere.

"By this combination it is calculated that the saving in fuel consumption per unit of work done by the locomotive when working in compound

gear, as compared with the ordinary single expansion cylinder locomotive, will be:

"1—The gain from increasing the steam pressure from 200 to 350 pounds will represent about 15 per cent less fuel consumed per drawbar horsepower hour.

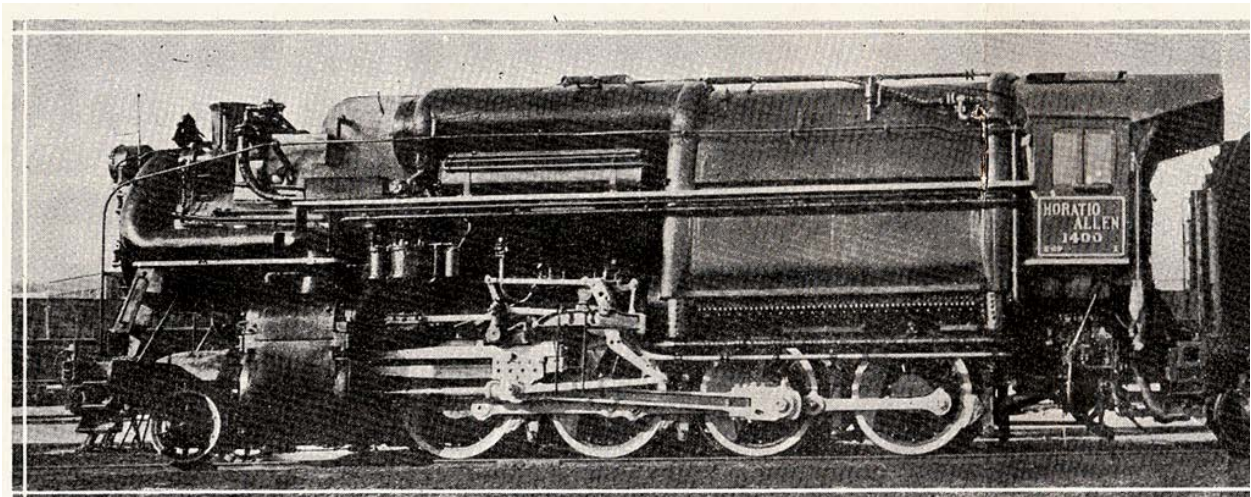
"2—The gain through the double expansion of the steam will represent about 17 per cent less fuel consumed per drawbar horsepower hour.

"3—The gain from generating 75 per cent, instead of 40 per cent, of the steam at the firebox end of the boiler, in direct contact with water tubes and the radiant heat action on the same, in combination with improved circulation of the water and the more effective combustion and heat utilization—as compared with the ordinary radial stayed or Belpaire type of firebox with or without combustion chamber, syphons, or like equipment—will represent about 12 per cent less fuel consumed per drawbar horsepower hour.

"The total calculated saving, when working compound, therefore approximates 39 per cent of the fuel consumed by the ordinary single expansion steam locomotive per drawbar horsepower hour.

"The present day steam locomotive retains the fundamental features of the locomotives of almost a century ago, i. e., the water-leg firebox, multi-tubular type of boiler, single expansion cylinders, use of the exhaust steam for forced draft, and the general arrangement of cylinders, frames, valve

(Continued on Page 13)



THE "HORATIO ALLEN"



*The "Horatio Allen," No. 1400*

(Continued from Page 11)

motion and running gear. The principal changes have been to increase the size and add numerous special appliances and accessories of considerable weight to promote capacity, efficiency and economy.

"The late war and the increased cost for coal and oil mining and distribution brought about the necessity for greater conservation and economy in the use of fuel. Likewise, the Transportation Act of 1920 emphasizes the importance of efficient and economical management, and reasonable expenditures for maintenance of way, structures and equipment. Public opinion also is continually demanding improved transportation service and lower rates, with particular reference to freight shipments.

"Next to wages, fuel is one of the railways' largest expenses. My contention has always been that a railroad should make every possible effort to reduce its fuel costs, and, in fact, its Transportation expenses as a whole, which represent immediate consumption, in order to provide the maximum amount of money for maintenance of way, structures and equipment, to keep the property in first class operating condition.

"Therefore, in order to assist in accomplishing these results through the use of 350 pounds of steam pressure, a substantially different type of locomotive boiler has been designed, the particular idea being to eliminate the usual stayed type of flat sheet firebox side and crown sheets and water legs, in combination with their sluggish circulation, and substitute self-supporting cylindrical containers, in line with stationary and marine practice. This has been accomplished in a very satisfactory manner, and a particular feature of the boiler design is the firebox, which contains almost 1,200 square feet of heating surface as compared with from 400 to 450 square feet in the largest combined fireboxes and combustion chambers of the usual locomotive boilers. In the latter, the firebox heating surface generally represents from 5 to 10 per cent of the total evaporation surface, whereas in the 'Horatio Allen' it represents about 37 per cent of the total. This enables taking greater advantage of the radiant heat of combustion for evaporation purposes and, as firebox heating surface ordinarily has about five times more steam-making capacity than that of the firebox tubes or flues, it provides for the production of about 75, instead of 40, per cent of the total steam at the firebox end of the boiler—where it can be most effectively, and economically generated.

"Through the use of 350 pounds steam pressure, in combination with a reasonable degree of superheat, the steam can be effectively utilized in a double-expansion engine system. To illus-

trate more specifically; in order to produce the tractive power that can be obtained in the 'Horatio Allen,' exclusive of the tender truck booster, it would require, with 200 pounds pressure, the admission of direct pressure steam four times in one revolution of the driving wheels to two 28-inch diameter, single expansion cylinders, whereas in the 'Horatio Allen' live steam is admitted only two times in one revolution, to one 23½-inch diameter high pressure cylinder, and after its expansion in that cylinder and reduction to about ninety pounds back pressure, it is exhausted into a receiver and then admitted to a single 41-inch diameter low pressure cylinder, and further expanded to from five to seven pounds back pressure; at which pressure it is exhausted to the atmosphere. By this means the great loss in the single expansion steam locomotive—on account of the high cylinder back pressure and the extraordinary amount of superheat that is exhausted to the atmosphere—is substantially reduced.

"The other principal novel features are: the physical combination of the cylinders and front frames; removal of dry, branch and receiver pipes and superheater header from inside to outside the boiler and smokebox; more accessible location of intercepting valve outside of cylinder saddle; application of an interlocking duplex type of low and high pressure outside type of main throttle valve; installation of an automatic centrifugal type of saturated steam separator; an imperforate fire brick baffle wall for the full length and width of the firebox; a secondary superheater for the steam used by the auxiliaries, and a tender truck booster.

"The construction of the 'Horatio Allen' should give some very valuable information as to what can be accomplished in steam railway service through the use of a boiler design which more nearly approximates what is now being generally used in modern central power stations and marine installations. In my opinion, if we can eliminate from the present day general design of steam locomotives a lot of inaccessible and complicated running gear, machinery and accessory equipment that is now being applied to the axle loading to increase capacity and promote efficiency—and which correspondingly increases the indirect steam losses, cylinder back pressure, and internal friction—and obtain more direct power and economy through a greater utilization of the heat in steam of higher pressure, generated in a boiler which will dispense with the existing type of firebox and combustion chamber with its combustion and spark losses, scale and sediment collecting sheets, limited firebox heating surface, sluggish circulation, stayed radial and flat sheets, and numerous other parts subject to leakage, breakage and failure, we will have made



substantial advance towards efficiency and in power per unit of engine weight.

"James J. Hill, who, in 1905, was one of the first railroad executives to adopt the Americanized design of Mallet locomotive, said that the improvements it had brought about in the steam locomotive would set back the electrification of the railways at least fifty years. The electrical engineers were then predicting that within five years, or by 1910, no more steam locomotives would be purchased on account of the so-called 'tractive effort, speed and length of run limitations' of the steam locomotive. However, since



Mrs. Lewis, who Christened The "Horatio Allen,"  
and President L. F. Loree

1910, about 34,000 steam locomotives have been ordered by the railroads of the United States as compared to a total of about 65,000 steam and 450 electric locomotives now in use on all the Class I carriers. Furthermore, these 65,000 steam locomotives have increased in size from an average of 27,000 pounds tractive power in 1910, to 39,000 pounds at present, with a maximum in the Virginian Mallets of 176,000 pounds per locomotive. The electric locomotives in the United States will now average about 1,900 nominal horsepower and 150 pounds of weight per nominal horsepower, as compared with the 'Horatio Allen,' which at a speed of around thirty miles per hour will produce about 2,500 drawbar horsepower with an average of less than 140 pounds of engine weight per drawbar horsepower.

"As to the speed limitations of the steam locomotives, we all know that there 'isn't any such thing,' as the speed of the locomotive, if

and when limited, is due to track, bridge and train conditions and requirements.

"It should also be remembered that steam locomotive operation can largely be controlled by two men in the cab of a self-contained mobile plant, whereas electric operation—as frequently demonstrated in the Greater New York district—is dependent upon the co-ordination and co-operation of a comparatively large and scattered amount of power plant, roadway and rolling stock supervision, operation, labor, machinery and equipment.

"It has often been said that the average steam locomotive engineman does not want 'big engines' and that he prefers the old 'tea pot.' That has not been my experience on any railroad, either in the United States or Canada, as the average railroad engineer and fireman take just as much, if not more, pride in being assigned to a new and modern piece of machinery, as any stationary power plant or steamship engineer, even with the usual 'baby troubles' and 'grief' that have to be gone through in the adoption of a new type of locomotive. To show the general interest already manifested in the 'Horatio Allen,' I quote a letter dated Cleveland, Ohio, November 17, 1924, from Assistant Editor John F. Welch of the Brotherhood of Locomotive Engineering Journal:

"The new high pressure locomotive which you designed for the D. & H., is rather interesting and I am sure the readers of our publication would enjoy, as well as be benefited by an article on this subject."

"The real fact is, that with few exceptions, railway employees like to see their roads and equipment 'keep at the head-end and not at the tail-end of the procession.' Railroad men in general are of the most sterling and seasoned quality, as well as armor-clad and copper-lined. This is demonstrated daily by the manner in which the Nation's rail transportation, which includes the movement of all the necessities, conveniences and comforts of life, is being conducted.

"It is also demonstrated by the manner in which Mr. EDMONDS, superintendent of motive power, and his associates, have taken a difficult task in a new and radical piece of machinery such as the 'Horatio Allen' and so successfully put it into commission.

"Before concluding my remarks, I wish to recall full tribute to J. H. Manning, former superintendent of motive power for The Delaware and Hudson Company, and to Consulting Engineers Frank J. Cole and C. J. Mellin of the American Locomotive Company, who were of great assistance in working out the details of the 'Horatio Allen,' and all of whom I very much regret have since passed on to their great reward."

## *Builders of the "Horatio Allen" Defend the Steam Locomotive as Against its Electric Rival*

**I**N introducing the next speaker, COLONEL LOREE said:

"I think very often as we look over advertisements in the magazines and books and read the names of large or small corporations, we fail to realize the elements of that corporation. We fail to visualize the great number of human beings, men and women, whose co-ordinated efforts are really the heart and soul of the corporation. Much has been said today of the designing of the 'Horatio Allen' and of the men who in the future will operate it and I think there are others to whom we should give a thought and that is the great number of men engaged in the construction, the men who as loyally and as courageously as any of the others have devoted themselves inspiringly to that work."

It was with pleasure that he then introduced J. G. Blunt, representative of the American Loco-

motive Company, the builders of the 'Horatio Allen.' He was present in place of Mr. Ennis, president of his company, who was detained at home by illness, and read the notes Mr. Ennis had prepared, which were, in part, as follows:

"As we look at this new unit of motive power, those of us familiar with the development of the locomotive, will without doubt admit that in all its fundamentals, it is very similar to the original 'Stourbridge Lion,' introduced by Mr. Allen. True—it is much larger, more powerful, but the motive fluid is the same, generated and applied in much the same manner. We wonder for a moment, just what progress we have really made in a century's time.

"Advocates of electric power for railroad transportation, as well as stationary power plant engineers, point with pride to some of the records of their achievements, and for some time have

1, 1925

fifteen



## *The Delaware and Hudson Company Bulletin*

scornfully told of the inefficiency and wastefulness of the steam locomotive. Notwithstanding all these criticisms, the steam locomotive continues to haul the railroad traffic of the country, is constantly doing it more economically, and for many years to come will continue to do so. It is true that the thermal efficiency of the steam locomotive is not high, but it is steadily improving, and no one of experience dares say that the limit has been reached, or that all possibilities of improvement have been exhausted.

"The steam locomotive has always been handicapped by conditions existing outside of the machine itself. Even the 'Stourbridge Lion' was too heavy for the rails. Today we find ourselves limited as to weight—we are confined within certain dimensions of height, width and length, none of which are ample—and all because we have a moving power plant, that must be available under all conditions of weather, and that must move over any part of the railroad system on which it operates.

"The stationary power plant is seldom limited by material conditions as to size. Usually there is ample room for it and the boiler with its firebox can be made just as large as its designer desires. It is kept in a building especially designed for it, where it will be snug and warm, and it is never called upon to go out on a cold stormy night and make a division.

"Steam locomotives, handicapped as they are, in service today, show 3000 to 3500 horsepower within a cross sectional area of 160 square feet. This means a boiler and firebox above the wheels, within the height of fifteen and a half feet, and not over ten and a half feet wide, that will produce and maintain this horsepower.

"The 'Stourbridge Lion' had a small firebox and grate, yet in proportion to work done it was much larger than in the locomotive before you.

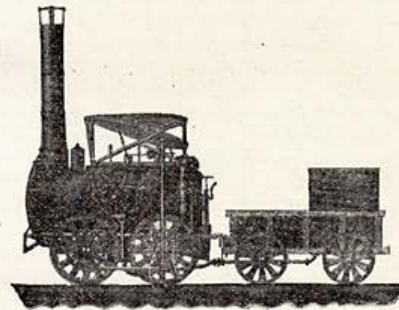
"Where else than in the steam locomotive do we find three thousand indicated horsepower produced from only seventy square feet of grate area? And yet with these necessarily high rates of combustion, the coal rates are not abnormally high. At lower rates, the steam locomotive will compare very favorably with modern stationary plants. Now, condensing locomotives are producing an indicated horsepower for one hour on two pounds of coal. Even at the drawbar they give a horsepower for two and one half pounds. Where else do we find such records along with such severe conditions. Locomotive designers are confronted as never before with limitations that absolutely prevent economies otherwise pos-

sible, but even so are not discouraged, but confident that there is yet opportunity for refinement and further progress.

"But it is not necessary that we defend the locomotive today. Its record stands and it has been a faithful servant.

"We are here for two purposes. The first is to honor that able engineer, Horatio Allen, who foresaw the future of rail motive power of the country for a century ahead, and whose judgment was respected by The Delaware and Hudson Company to the extent that they placed it in his hands to select and supervise the installation of the first steam locomotive for its railroad.

"But we are here also to congratulate you, Mr. Loree, and your associates, not only on this excellent piece of machinery that stands before you, but on the foresight and progressiveness that made this possible. This is not the first contribution of much value that you have made



THE "STOURBRIDGE LION"

toward economies in railroad operation, and you have always shown a keen desire to advance the art of railroading.

"The new 'Horatio Allen' is a daring piece of engineering. It utilizes a higher steam pressure than ever used before on locomotives in this country. The boiler design is therefore novel, and the test results of this locomotive will contribute data, heretofore unavailable, that will widen our knowledge considerably. The locomotive, itself, is a step forward. We are proud to be associated with you in the development of this work. We claim no credit, excepting that due to an honest effort to give good workmanship and material.

"For whatever this locomotive accomplishes—for its advanced design, you and your associates are responsible, and to you the credit belongs."



## *"The Locomotive is the Heart of Transportation," Declares I. C. C. Inspector Pack.*

**A**G. PACK, chief inspector, Bureau of Locomotive Inspection of the Interstate Commerce Commission, was the last speaker. The christening of the 'Horatio Allen' he commended as a worthy tribute to the one who did so much in the interest of transportation and of civilization.

"The locomotive," he said, "is the heart of transportation, therefore, the heart and soul, so to speak, of our present railroad system; without locomotives in good condition the railroads cannot properly function.

"About one hundred years ago the stage coach, horse-drawn wagon, canal boat, and sailing ship were the only means of transportation which was of necessity slow and cumbersome. Cities and communities in those days were dependent upon the immediate surrounding country for food and the necessary comforts of life. Today every village and every hamlet draws the things necessary in bringing comfort and happiness from the entire world. This has been made possible by the evolution of transportation methods from the ox-drawn cart and the stage coach to the complete, complex and remarkable railroad systems.

"The evolution of transportation methods and of the remarkable railroad systems has been wonderfully rapid and perhaps no single individual has contributed to the development of the locomotive and of the railroads than did Horatio Allen. History records the fact that he went to England to study the locomotive and how later he operated the 'Stourbridge Lion,' the first locomotive ever put in use on the American continent. His description of the memorable run seems to reflect his courage and ability, which I do not believe can be better described than by using his own language:

"The line of road was straight about 600 feet, being parallel with the canal, then crossing the Lackawaxen creek, by a curve nearly a quarter of a circle long, of a radius of 750 feet, on trestle work about thirty feet above the creek and from the curve extending in a line nearly straight into the woods of Pennsylvania. The road having been built of timber in long lengths, and not well seasoned, some of the rails were not exactly in their true position. Under these circumstances the feelings of the lookers on became general that either the road would break down under the weight of the locomotive, or if the curve ahead was reached, that the locomotive would not keep the track, and would dash into the creek with a fall of some thirty feet. When

the steam was of high pressure, and all was ready, I took my position on the platform of the locomotive alone and with my hand on the throttle-valve said: If there is any danger in this ride, it is not necessary that the life and limb of more than one should be subjected to danger, and felt that the time would come when I should look back with great interest to the ride then before me. The locomotive having no train behind it, answered at once to the movement of the valve; soon the straight line was run over, the curve was reached and passed before there was time to think as to its being passed safely, and soon I was out of sight in the three miles ride alone in the woods of Pennsylvania."

"Through the geniusness of men, things miraculous have been accomplished as if directed by the hand of Providence. Almost within the memory of the present generation the number of locomotives have increased from nothing in the Continental United States of America to over 70,000, and the railroad trackage has increased from nothing to over 285,000 miles of main line upon which are employed more than 2,000,000 men and women.

"From the 'Stourbridge Lion,' with its cylinders of seven and a half inches in diameter and its tractive effort of a few hundred pounds, locomotives developed until today we have before us this mighty machine, now being christened in the name of 'Horatio Allen' and in honor of his memory, carrying 350 pounds steam pressure, using it expansively and the second time before it is finally released and lost, and which develops 70,000 pounds tractive effort working compound, and 90,000 pounds working simple.

"Who knows but what future generations will continue this great progress until our methods and practices may seem as antiquated and as far out of date as we now view the railroad and locomotive construction as in the days of the 'Stourbridge Lion.'

"Every man who performs service on the railroads is contributing something to their development and to the advancement of civilization, therefore, we should perform our tasks, whatever may be our lot, to the utmost of our ability and with a single eye to the purposes to be accomplished.

"The world will not stand still; progress cannot stop; it must advance or regress. As long as man continues to be a restless being and is ambitious to serve a more useful purpose in life,

radical changes will be developed that will change their entire line of thought and action as they have in the generations gone by. It is through the exchange of ideas and experiences that has developed and will continue to develop the best there is in the human brain. It is through association with the people in the different walks of life and in the different climes that we learn of their ambitions and desires and arrive at a better understanding of their aims and objects.

“Such occasions as we are today privileged to enjoy are of value only when they serve to imbue men and women with the desire to accomplish bigger things and render greater service. The christening of this locomotive and dedicating it to the service of mankind will be recorded in history and future generations will profit by our experiences. Therefore, let us expect that the fondest hopes of its designers and builders may be fully realized that our children and children’s children may continue to advance.”

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Here are two photographs of the *Horatio Allen* that are in the Alan G. Dustin Collection of the Carbondale D&H Transportation Museum.

*D&H No. 1400 Horatio Allen*



*D&H No. 1400 Horatio Allen*



*D&H No. 1400 Horatio Allen*



During the 1927 annual inspection tour by the Board of Managers of the property of the Delaware and Hudson Company, which began on June 2, 1927, the managers had a first-hand look at D&H engines No. 556, No. 1112, No. 1400, and No. 1401. Here is the account of their tour, as published in *The Delaware and Hudson Company Bulletin* of July 15, 1927, pp. 219-221, 225:

*The Delaware and Hudson Company Bulletin*

## Managers Make Annual Tour

*Trip Includes, Among Other Things, An Inspection of Locomotives Rebuilt at Colonie and an Entertainment by The Delaware and Hudson Glee Club*

A PART from their somewhat routine inspection of the property of the Company, the members of the Board of Managers of The Delaware and Hudson Company, who made their annual tour of the road beginning Thursday, June 2, had, and no doubt enjoyed, the opportunity of seeing at first hand some of the unusual accomplishments of our mechanical department employes and the privilege of being entertained by others at a musical recital. The directors' party, headed by PRESIDENT L. F. LOREE, included CORNELIUS VANDERBILT, R. C. PRUYN, JOHN T. PRATT and J. W. METTLER. Members of the staff of COLONEL J. T. LOREE, vice-president and general manager, accompanied the party as did division officials on their respective divisions.

At Colonie there was displayed for inspection locomotives Nos. 556 and 1112 rebuilt at the local shops, together with the John B. Jervis, or No. 1401, a near model of the Horatio Allen, No. 1400. The No. 556, passenger type 4-6-0, Class D-3-B, had just been completed, having received Class S3XFT repairs. It embodies many new features, first among which to attract the eye, perhaps, is its jacket of Delhi stainless steel which, with nickel-plated fittings and polished motion work, make it a "thing" of beauty. Its equipment includes a new design engine truck with outside journal boxes, new Alco lateral motion device and power reverse gear, hylastic steel frames, etcetera. Boiler pressure has been set at 215 pounds; its cylinders are 22" by 26"; drivers, 63"; tractive effort, 34,600 pounds; weight on drivers, 160,000 pounds; weight on trucks, 48,000 pounds; weight of engine, 208,000 pounds; and weight of engine and tender, 343,000 pounds.

Locomotive No. 1112, freight type 2-8-0, Class E-5-A, has a boiler pressure of 275 pounds and is also equipped with Alco engine truck with outside journal boxes, lateral motion device and power reverse gear and other special applications. Its boiler is new throughout and has copper throat, flue and door sheets. The tender, supported by a steel underframe and new 6½" by 12" trucks has a water capacity of 12,000 gallons. Other specifications are as follows:

Cylinders, 24¼" by 32"; drivers, 63"; tractive

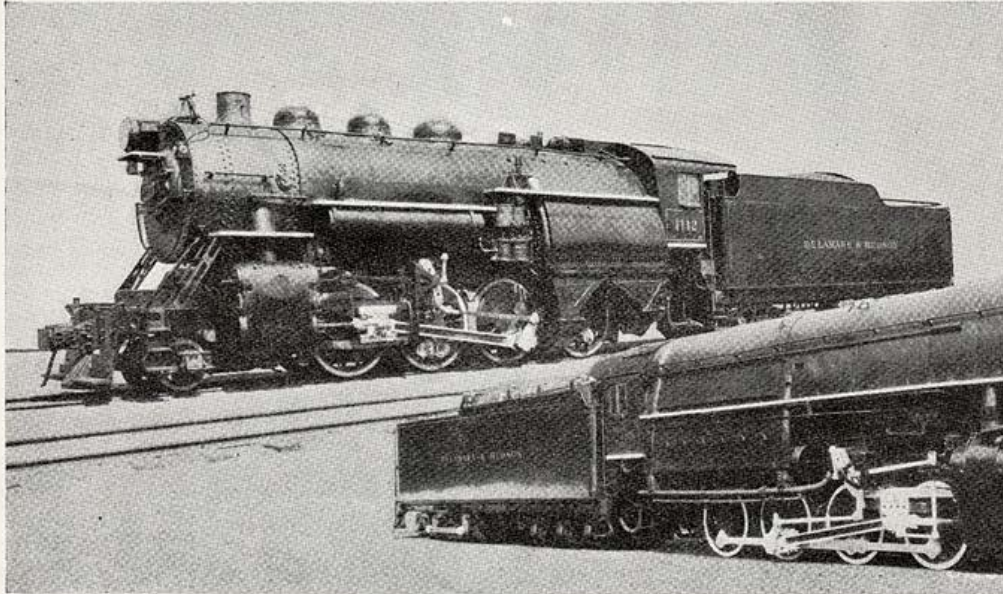
effort, 71,000 pounds; weight on drivers, 272,000 pounds; weight of truck, 29,500 pounds; weight of engine, 301,500 pounds; and weight of engine and tender, 474,500 pounds.

Locomotive No. 1401, freight type 2-8-0, Class E-7, was built in the American Locomotive Works, Schenectady, during February last, and its specifications are as follows: Boiler pressure, 400 pounds; cylinders, 22¼" and 38½" by 30"; drivers, 57"; tractive effort—compound, 70,300 pounds; compound with booster, 88,300 pounds; simple, 84,300 pounds; simple, with booster, 102,300 pounds; weight on drivers, 295,000 pounds; weight on trucks, 41,500 pounds; weight of engine, 336,500 pounds; and weight of engine and tender, 609,500 pounds. Its auxiliary locomotive has a pressure of 400 pounds; cylinders, 9 by 12"; drivers, 36"; tractive effort, 18,000 pounds; and a gear ratio of 2¼ to 1.

On the same evening, the members of the Board were entertained in the recreation room at the Green Island car shop by The Delaware and Hudson Glee Club. The program opened with the singing of "John Peel" and "The Bells of St. Mary's" by EDWARD DILLON and the club. Other numbers were as follows: "The Moon Drops Low," by H. F. LAPERCHÉ; "The Rouge Bosquet" and "Cornfield Melodies," by the club; selections by The Delaware and Hudson quartette; "Twilight fo' Dreamin'," by the club; "Song of the Vagabonds," by JOHN CROWLEY and the club; selections by W. F. SHEEHAN; and, in conclusion, "A Little Close Harmony" and "Goin' Home," by the club.

PRESIDENT LOREE personally introduced "The Rouge Bosquet," explaining that following The Delaware and Hudson Athletic Association's annual show in 1924, during which the cast sang "Friends of Yesterday," as a veiled tribute to the memory of the late LOWELL KENNEY, statistician for operations, he had commissioned H. O. Osgood, editor of *The Musical Courier*, of New York City, to compose a musical number for The Delaware and Hudson Glee Club and this Mr. Osgood had done, using Joyce Kilmer's poem, "The Rouge Bosquet." Mr. Osgood died suddenly shortly after completing the work. As a





Locomotives the Board of Managers inspected at Colonie. Nos. 1112 and 5

tribute to the glee club and in memory of Mr. KENNEY, whom he characterized as "one of the most popular and promising young officials on the railroad," and Mr. Osgood, he requested that the audience rise and remain standing during the singing of the memorial, the words of which are as follows:

In a wood they call the Rouge Bosquet  
There is a new-made grave today,  
Built by never a spade nor pick  
Yet cover'd with earth ten metres thick.

There lie many fighting men, lie dead,  
Dead in their youthful prime  
Never to laugh nor love again,  
Nor taste the summer time

For death came flying thro' the air  
And stayed his flight at the dug-out stair;  
Touched his prey and left them there,  
Clay to clay.

He hid their bodies stealthily  
In the soil they sought to free,  
He hid their bodies stealthily  
And fled away.

Now over the grave, abrupt and clear,  
Three volleys ring;  
Perhaps their brave young spirits hear  
The bugle ring.

"Go to sleep, Go to sleep,  
Slumber well where the shell screamed and  
fell;  
Let your rifles rest on the floor  
You will not need them any more.  
Danger's past, Now at last  
Go to sleep."

There is on earth no worthier grave  
To hold the bodies of the brave,  
Than this place of pain and pride  
Where they nobly fought and nobly died.

Never fear but in the skies  
Saints and angels stand,  
Smiling with their holy eyes  
Upon this new-come band,

Saint Michael's sword darts through the air  
To touch the aureole on his hair  
As he sees them stand saluting there,  
His stalwart sons.

And Patrick, Brigid, Columkil,  
Rejoice that in warriors still,  
That in the veins of warriors  
The Gael's blood runs.

And up to Heaven's doorway floats  
From Rouge Bosquet  
A cloud of silver bugle notes  
That softly say,

Farewell! Farewell!  
Comrades true, born anew, peace to you!

For your souls shall be where the heroes are,  
Your mem'ry shine like the morning star.

Brave and dear, Shield us here,  
Farewell!

Oh brave and dear,  
Farewell, farewell!

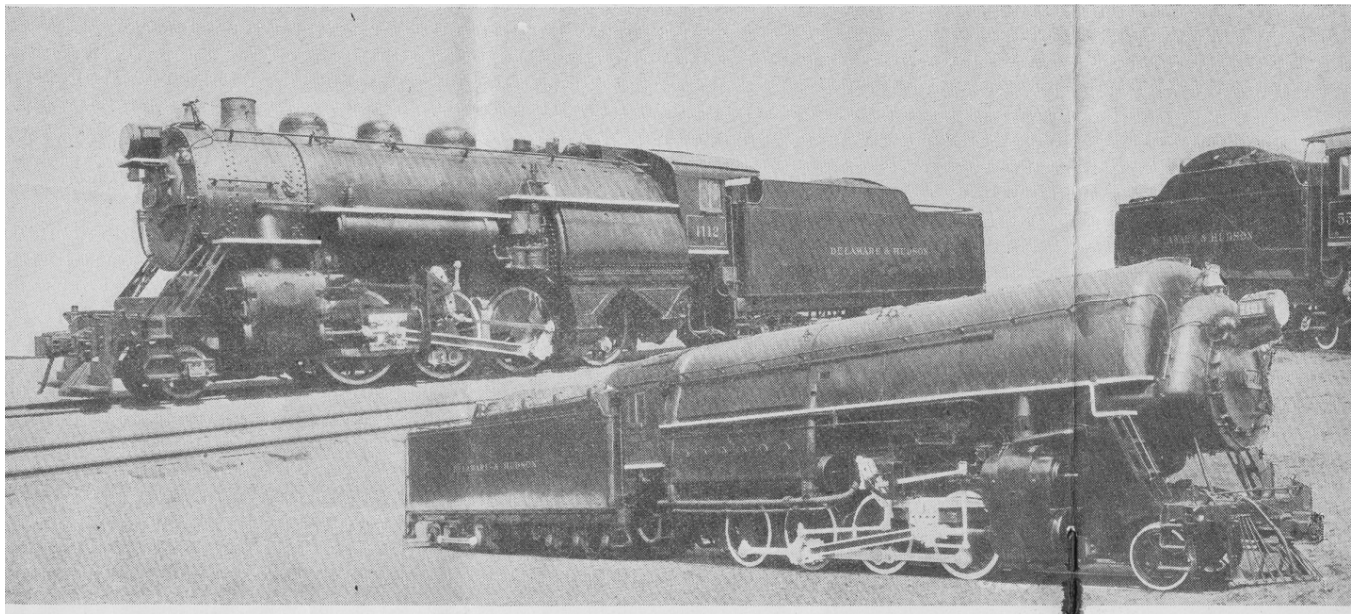
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One incident of the trip, in particular, should be related here in some detail because of its unusual human interest. Already the story has

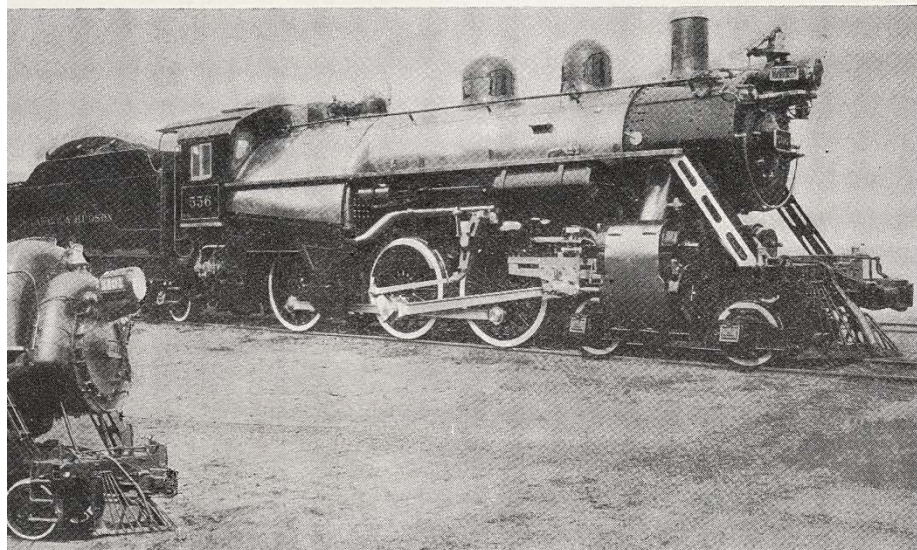
Caption on the two photos given immediately below:

*Locomotives the Board of Managers inspected at Colonie. Nos. 1112 and 556 were rebuilt at the local shops; the third (center) is the John B. Jervis, No. 1400*

Page 220 (left side of 2-page photo):







uilt at the local shops ; the third (center) is the John B. Jervis, No. 1400

been so well told in the *New York Age* that we will take the liberty of quoting therefrom.

"Each year, for the past twenty years," says the *Age*, the Pullman Company has loaned the services of Joseph W. Price, one of its star porters, to the president and board of managers of The Delaware and Hudson Company on their annual trip of inspection. And for twenty years in June of each year, when the request came for his services, 'Joe,' as everyone calls him, has laid aside his Pullman uniform, kissed his family goodbye, and for several days became the temporary employe of another corporation, but a corporation equally as affluent.



"JOE" PRICE

"Indeed, The Delaware and Hudson Company, with its vast network of railways, its hotels and its rich coal mines, could easily measure financial arms with the nationally known Pullman Company, if corporations were given to the habit of battling each other. But since this is ordinarily not the way they do business, one can only theorize on the subject. However, the men who comprise the board of directors, or managers, of a company, are good indexes of that company's affluence. The men who compose the board of managers of The Delaware and Hudson Company are no exception to this rule.

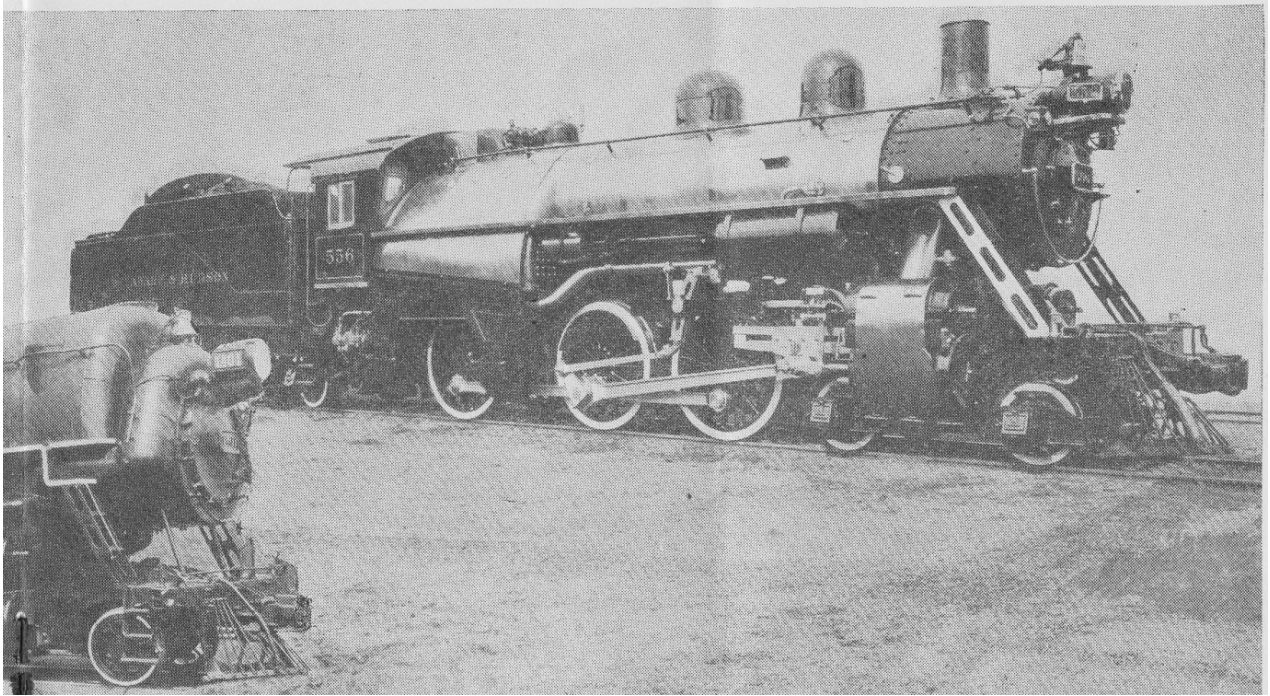
"The annual inspection trips of the president and board of managers of The Delaware and Hudson Company has been a feature with the corporation ever since 1841. Besides the executives, the party is always composed of one or more persons of prominence. On the inspection trip made in the year mentioned, Washington Irving was a guest. The corporation was then known as The Delaware and Hudson Canal Company, its transportation business being done by water. Today it is one of the richest railway and coal-producing companies in the United States.

"In 1907, Leonor F. Loree, the present incumbent, was elected to the presidency of the Company. In June of that year, he made his first

(Concluded on Page 225)



Page 221 (right side of 2-page photo):



*Managers Make Annual Tour*  
(Continued from Page 221)

inspection trip. The late 'Bob' Madison, who had charge of the employes on the trip, selected 'Joe' Price as one of the crew for the tour with the new president. 'Joe' has made the trip each successive year since. He is the only one of the employes alive today who was on that first tour. And he and President Loree are the only two who have made the trip regularly each year.

"So on Sunday afternoon, June 5, when the party, which had left New York on Thursday, June 2, was on its return trip home, Mr. Loree sent for Price.

"Price was rather surprised at the summons, for he was in charge of the private Pullman, and as the party was at luncheon, he couldn't think what the President wished of him. However, he presented himself in the dining room of the President's car.

"On his entrance, Mr. Loree tapped the table lightly with a silver knife which employed as a gavel.

" 'Gentlemen,' said he, 'this is Joseph Price, who has been making the annual trips with us for the past twenty years, and his services have always been of the highest type. He is one of the Pullman Company's high grade porters. The only bad feature is that he goes on the retired list soon.'

"Addressing 'Joe,' he said, 'Price, on behalf of the board of managers of our Company, I present you with this gift as a slight token of our esteem and appreciation of services rendered on our inspection trips.'

"The gift was a Ball gold watch, on which was engraved the following: 'To J. W. Price: In appreciation of Services Upon 20 Annual Inspection Trips. Delaware and Hudson Company—President and Board of Managers.' Then followed the names of executives. They are: L. F. Loree, Cornelius Vanderbilt, R. C. Pruyn, W. H. Williams, H. D. DeForest, C. S. Weston, P. H. Stewart, E. H. Outerbridge, E. R. Harriman, J. T. Pratt and J. W. Mettler. June 2nd to 5th, 1927."

*two hundred and twenty-five*

On the same evening, June 2, the members of the Board were entertained in the recreation room at the Green Island car shop by the Delaware and Hudson Glee Club.

On page 221 in the report given above of the 1927 annual inspection tour (p. 130 herein) there are two paragraphs that merit special notice because they contain especially interesting information about the D&H annual inspection tours that is not widely known:

1. Pullman Company lends its star porter to the D&H annually for the D&H inspection tour:

“Every year, since 1907, the Pullman Company has loaned the services of Joseph W. Price, one of its star porters, to the president and board of managers of The Delaware and Hudson Company on their annual trip of inspection. On the return trip to New York City from Albany on June 5, President Loree, in the dining room of the President's Car, presented Price "with this gift as a slight token of our esteem and appreciation of services rendered on our inspection trips."The gift was a Ball gold watch on which was engraved the following: 'To J. W. Price: In appreciation of services Upon 20 Annual Inspection Trips. Delaware and Hudson Company—President and Board of Managers.' Then followed the names of the executives. They are: L. F. Loree, Cornelius Vanderbilt, R. C. Pruyn, W. H. Williams, H. D. DeForest, C. S. Weston, P. H. Stewart, E. H. Outerbridge, E. R. Harriman, J. T. Pratt and J. W. Mettler. June 2<sup>nd</sup> to 5<sup>th</sup>, 1927.' " (p. 225)

2. D&H annual inspection tours always have one or more persons of prominence on the tour:

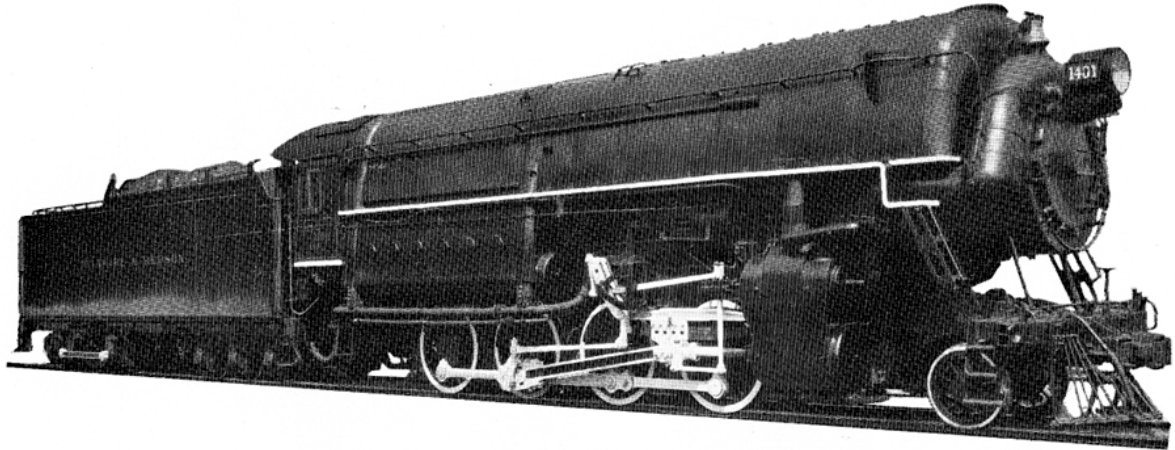
“The annual inspection trips of the president and board of managers of The Delaware and Hudson Company has been a feature with the corporation since 1841. Besides the executives, the party is always composed of one or more persons of prominence. On the inspection trip made in the year mentioned, Washington Irving was a guest. The corporation was then known as The Delaware and Hudson Canal Company. . . "



**No. 1401:**

--the *John B. Jervis*; christened in 1927; ran for only 83,021 miles

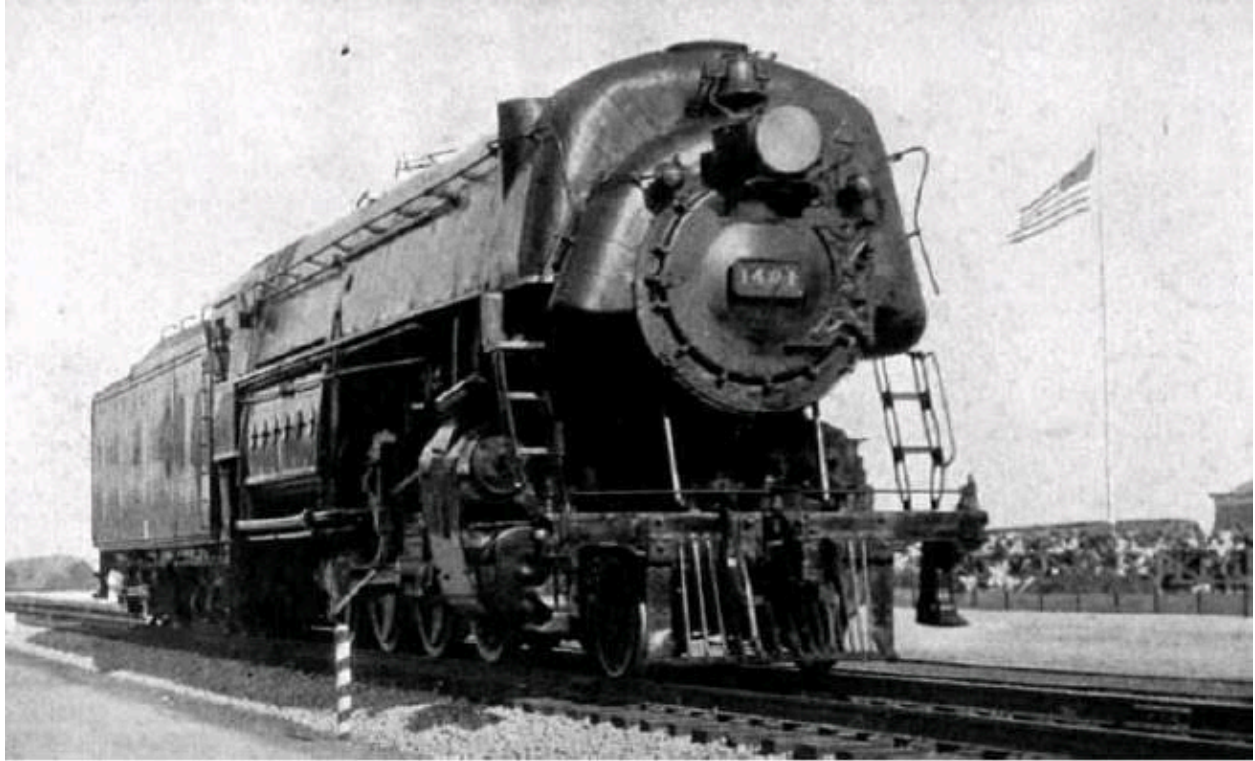
Here is the official portrait of No. 1401 that is presented in *Motive Power, Passenger, Freight and Work Equipment, 1926-1936*, p. 31:



JOHN B. JERVIS

Built by American Locomotive Company in 1927. Type 2-8-0. Gauge of Track 4'8½". Cylinders, Diameter High Pressure 22¼", Low Pressure 38½", Stroke 30". Driving Wheel Diameter 57". Boiler, Water Tube Type, Diameter 61⅞", Pressure 400 Pounds. Fire Box, Length 152", Width 77⅝". Tubes, Superheater 52. Diameter 5½", Length 15'0", Regular 101. Diameter 2", Length 15'0". Wheel Base, Driving 18'0", Engine 29'0", Engine and Tender 74'11½". Weight in Working Order: Leading Truck 41500 Pounds, Driving 295000 Pounds, Engine 336500 Pounds, Engine and Tender 553400 Pounds. Fuel, Bituminous. Heating Surface: Tubes 788, Flues 1116, Fire Box 1150, Arch Tubes 67, Total 3121 Square Feet, Superheater 700 Square Feet. Tractive Power: Simple at 400 Pounds Boiler Pressure 85800 Pounds, Compound at 400 Pounds Boiler Pressure 71600 Pounds. Tender Booster at 400 Pounds Boiler Pressure 16200 Pounds. Tender Capacity, Water 12000 Gallons, Fuel 16 Tons.

Here is a photograph of the John B. Jervis that we downloaded from *Facebook* on October 13, 2014:



*D&H No. 1401 John B. Jervis*

**No. 1402:**

**James Archbald**

-- Alco, 2-8-0, April 1930; ran for only 54,108 miles

The *James Archbald* is the cover photo on the May 15, 1930 issue of *The Delaware and Hudson Railroad Bulletin*:





There is also a substantial article on the *James Archbald* in the May 15, 1930 issue of *The Delaware and Hudson Railroad Bulletin*, pp. 151-153, 157-158, titled "Efficiency on Wheels." Here is that article:

*The Delaware and Hudson Railroad Bulletin*

## Efficiency On Wheels

*Locomotive 1402, With 500 Pounds Steam Pressure and Special Alloy Steel Parts  
Reducing Weight, Develops Tremendous Power With Low Fuel Consumption*

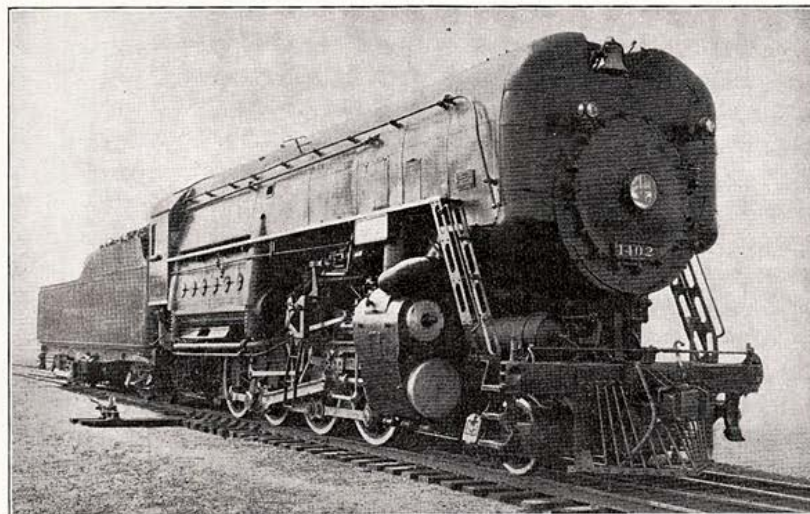
**I**N introducing Delaware and Hudson Locomotive No. 1402, named *James Archbald*, to our readers it may be of interest to summarize rapidly the development of this class of power and the underlying motive therefor.

A little more than five years have slipped by since the *Horatio Allen*, otherwise known as Delaware and Hudson Locomotive No. 1400, carrying a boiler pressure of 350 pounds per square inch, became the outstanding pioneer example of the steam locomotive designer's skill of that time. *The Bulletin* of January 1st, 1925, describes in detail the ceremony attendant upon the christening of the new locomotive.

During the score of years immediately preceding this event changes had been taking place in the design of so-called "conventional" types of locomotives in an heroic effort by the designers and builders to stem the rising tide in favor of electrification of main-line tracks. Proponents of the newer method of propulsion were stressing the

7 per cent maximum over-all efficiency with which the locomotive engine transformed the available energy in a lump of coal into useful work at the rear drawbar of the tender; meanwhile emphasizing the 80 to 90 per cent efficiency of the electric locomotive. Without going into a lengthy discussion of cost of power house equipment, transmission losses and interdependence of operation in emergencies, suffice it to say that the Delaware and Hudson management has always felt that, as PRESIDENT LOREE said at the Agents' Meeting last fall, "—the whole future, from our point of view, is with the steam railroad."

Let us return for a moment to the 7 per cent efficiency of the locomotive. When it is considered that a maximum *theoretical* efficiency of about 15 per cent is all that is possible, it will readily be seen that, if we increase the *actual* efficiency but 1 per cent that will represent an improvement of one-eighth of what is *theoretically* attainable but which is never reached in actual operation.



Right Side, Showing High Pressure Cylinder

### *The Delaware and Hudson Railroad Bulletin*

By resorting to the use of superheaters, feed-water heaters, power-driven stokers and other devices it has been possible to build locomotives of enormous size, the overall efficiency of which has been reported to be as high as 8 per cent.

An easier way of achieving the same result is to increase the steam pressure and take advantage of the possibilities of using the same steam expansively in more than one stage or cylinder. In Europe compounding has been practiced for many years. The multiple expansion of the steam from a small cylinder to a larger one, through an intermediate receiving chamber is much more efficient than exhausting directly out of the smokestack after the initial expansion.

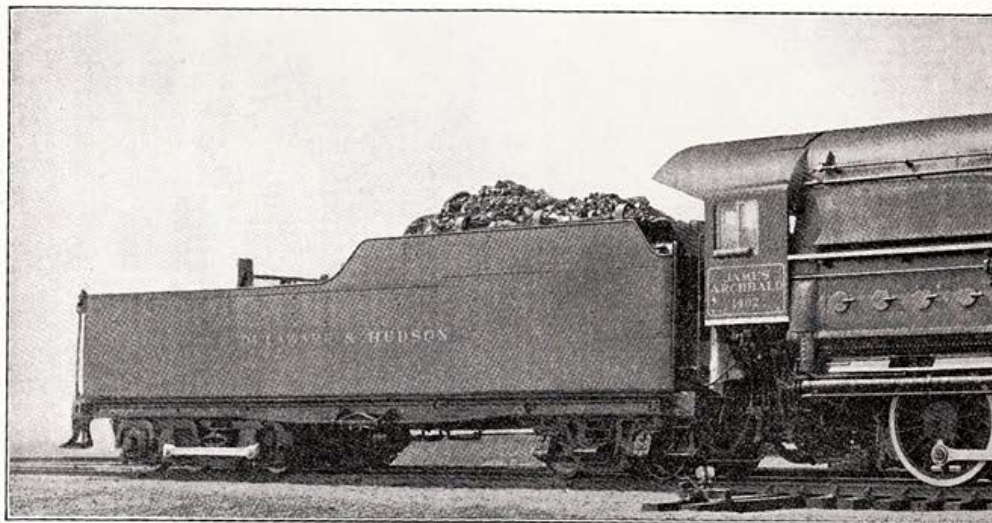
With the general adoption of the superheater about twenty-five years ago American railroads generally discarded the compound principle in order to rid themselves of the then excessive cost of maintaining locomotives of this type. Today, after over a score of years of development, designers and builders agree that the compound type with a higher pressure boiler offers the surest solution of the problem of producing greater efficiency of operation.

Since boiler pressures in excess of 250 pounds per square inch are rare in America, the three Delaware and Hudson locomotives 1400, 1401, and 1402, named in order *Horatio Allen*, *John B. Jer-*

*vis*, and *James Archbald*, are noteworthy because of their pressures of 350, 400, and 500 pounds. That the first two have been in successful operation for five and three years, respectively, should remove them from the experimental class. They are accomplishments.

The *James Archbald* is very appropriately named after the man to whom was entrusted the task of first improving the Delaware and Hudson Canal and the Gravity Railroad so as to increase its capacity. Starting as a contractor in the construction of the Erie Canal, Mr. Archbald later rose to the presidency of a western railroad.

In appearance "the 1402" is an improvement over her predecessors, the jacket extending from the cab to the front of the smokebox in an unbroken line. The smokestack and bell are thus completely hidden from view from the sides and rear. Following the precedent established on locomotives 651 and 652, the headlight is placed in a recess in the smokebox front. Sixty-three inch driving wheels of high tensile steel should permit faster operation than is permissible with the earlier engines of this class equipped with fifty-seven inch drivers, and still allow the piston speed to be held down to a desired maximum. Although the engine is of the Consolidation type (2-8-0) and not intended for high speeds, the counter-balancing of the driving wheels is calculated for 75 miles per hour.



Although its Tractive Effort (with Booster) is 102,300 lbs. the 1



The ruggedness of the machine is strikingly apparent upon an inspection of the cast nickel steel guides and the crossheads which carry Becker wrist pins. Outside bearings are used on the engine truck. All driving axles and crank pins are of nickel steel, while the piston heads and solid piston rods are of high tensile steel. Weight limitations, which prevent increasing bearing sizes, necessitate the use of a higher grade of material than is generally used in locomotive construction.

Illuminated number plates are mounted below the running boards above the cylinders. The pneumatic quick-acting bell-ringer actuates the clapper only, the bell remaining stationary except in emergencies when hand operation takes place in the usual manner. Air operation also controls the steam whistle, although it may be manually operated if desired.

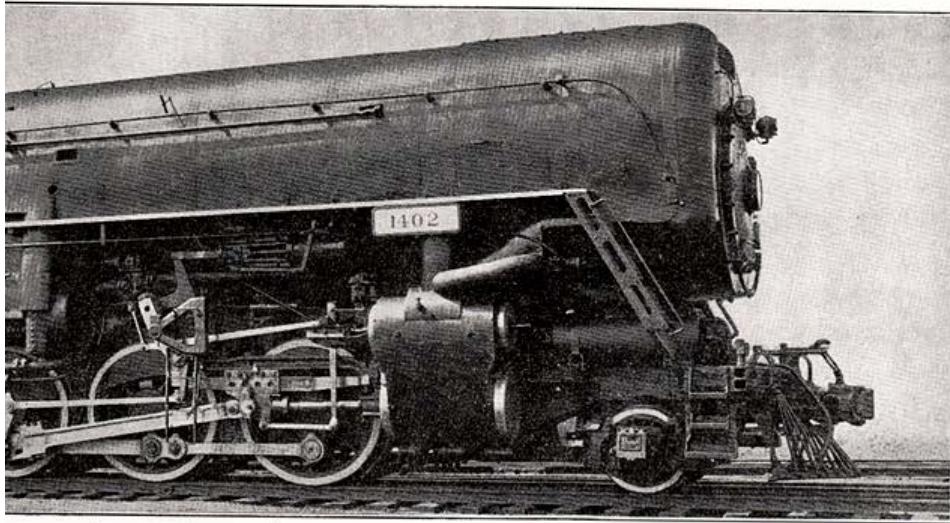
Because of the pressure of 500 pounds per square inch against which it is necessary to force water into the boiler, and because of the high temperature of the steam used for its operation, the first Monel metal inspirator cast in this country is used on the new locomotive. This inspirator, of 4,500 gallons per hour capacity, acts as an auxiliary to the Dabeg mechanically driven feed-water pump, which is directly connected to the left crosshead.

A new design of Westinghouse cross-compound air compressor is used. This has a high pressure steam cylinder of only seven and one-half inches diameter as compared with eight and one-half inches in the regular design of 150 cubic feet per minute capacity. The decrease is possible because of the high pressure of the steam even after passing through a five-sixteenth inch choke between the governor and the pump. Exhaust steam from the compressor is carried to the condensing reservoir of the feed-water pump instead of exhausting it up the stack as is usually done.

A 6-feed force-feed lubricator delivers oil into both the top and bottom of the cylinders as well as in the valve chambers. It also feeds oil to the main driving boxes. The remainder of the driving boxes are grease lubricated. The guide oil "cups" are in reality reservoirs cast into the guide bars. A hydrostatic lubricator in the cab supplies lubrication to the intercepting valve, steam end of air pump, booster and drifting valve. There is also a flange-oiler of the pendulum type for lubricating the flanges of the driving tires to prevent wear on curves.

The most vitally important part of the locomotive is the boiler which must safely hold steam under a pressure of 500 pounds per square inch. It is built almost entirely of nickel steel and has a water-tube fire-box similar to the 1400 and 1401.

(Continued on page 157)



Weights but 356,000 lbs., 300,000 Being on the Drivers



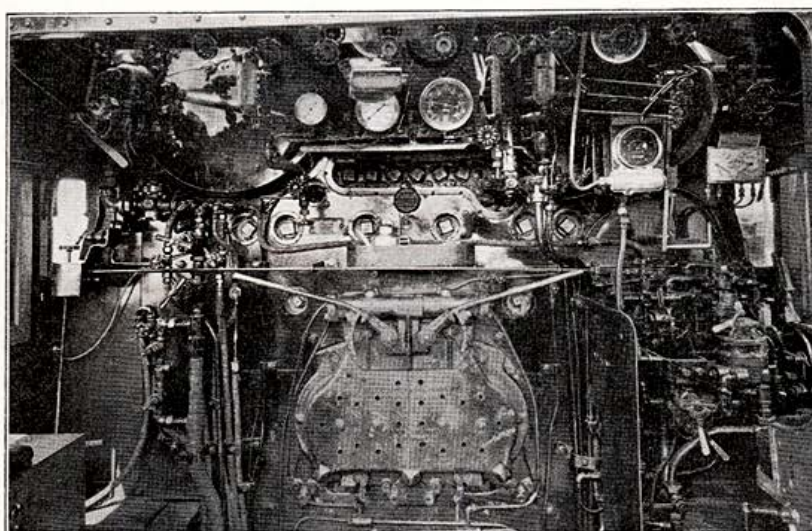
*Efficiency On Wheels*

(Continued from page 153)

This consists of a series of longitudinal nickel steel drums at the top and bottom, connected by rows of vertical tubes through which the water circulates at a very rapid rate, being transformed into steam as it reaches the upper row of drums. Additional heating surface is furnished by the flues as in any locomotive.

While a steam pressure of 500 pounds seems high to most railroaders, it should be noted that there are in operation in Europe locomotives carrying 800 to 900 pounds in dual-pressure boil-

instrument board. The temperature and pressure of the steam at various stages of its passage from the boiler to the stack, the feedwater temperature and pressure, the cut-off and speed-recorder, and the various air pressures are all available from the instruments. The extension handles from the cab-turret valves are brought back to an auxiliary board which is marked to show the purpose of each valve. All steam pipes, which must be extra heavy to withstand the high pressure steam, are heavily lagged to avoid danger of burning the crew. Extension handles on the gauge cocks make them readily accessible. The usual throttle,



In the Cab—A Bewildering Array of Gauges and Valve Handles

ers. There is also now being constructed a locomotive which will carry 3,300 pounds pressure in its boiler.

Among the special provisions made for maintaining the boiler are two blow-off valves which exhaust through mufflers before the steam reaches the atmosphere, thus lessening the noise and disturbance in the roundhouse when it is necessary to "blow down" the steam in connection with inspection or repair work.

In the cab is found a bewildering array of gauges and valve handles. There is an even dozen of gauges, without counting the two water gauges, most of which are located on a central

Also reverse lever, brake, sander, and miscellaneous valves complete the cab equipment. A "butterfly" type air-operated fire-door is also provided.

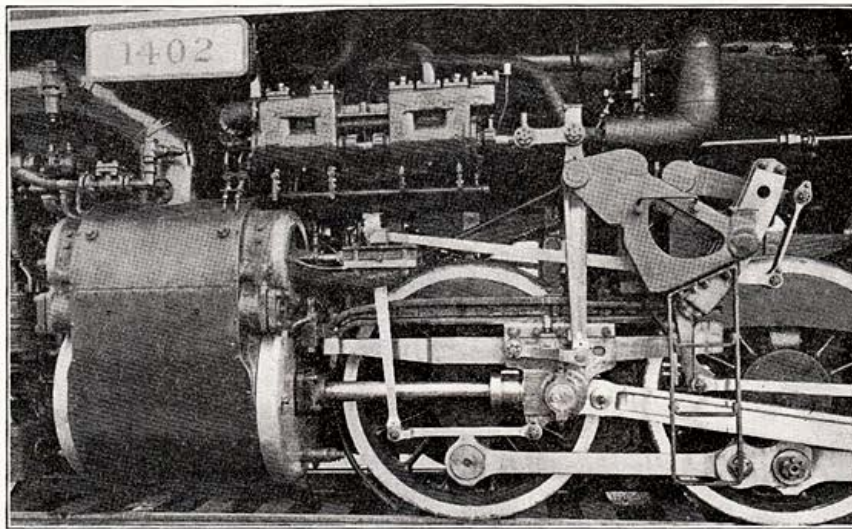
The tractive power of the *James Archbald* will be exactly the same as that of the other two locomotives; 84,300 pounds as a simple engine, that is, using high pressure steam in both cylinders. In starting a train this may be further increased by "cutting in" the auxiliary locomotive, more commonly called the tender booster, which adds 18,000 pounds, thus making a total of 102,300. This tremendous pull is exceeded by few road engines other than some of the giant Mal-

## The Delaware and Hudson Railroad Bulletin

lets. Once the train is under way the booster is shut off and the steam is used expansively first in the small high pressure cylinder ( $20\frac{1}{2} \times 32$  inches) and then in the large low pressure side ( $35\frac{1}{2} \times 32$  inches). The tractive force then drops to 70,300 pounds or less, depending on what is required to keep the train in motion at the desired speed.

The fire-box which is  $152 \times 77\frac{1}{2}$  inches contains a grate area of 82 square feet, cast steel grate bars of the pin-hole type being used. The ash pan dampers are arranged to open automatically with the opening of the throttle, closing when steam is not being "worked." A similar arrangement is now in successful operation on locomotive 1114.

Safety of operation and cost of maintenance must always be weighed against capacity and operating expense. Experience with the 1400 and 1401 proves that locomotives of this design are safe and that the cost of maintenance is not out of proportion to their performance on the road. Operating expense of the 1402 should be even lower than for its predecessors if the greater economies of the higher boiler pressure are realized. The earlier engines have demonstrated that they possess ample capacity for doing the work for which they are designed. They have plenty of reserve power, ample starting, accelerating, and hauling capacity. Thus No. 1402 represents the



Mechanical Driven Feed Water Pump and Low Pressure Cylinder

To assist the fireman in his work a steam-driven coal pusher is provided to "shovel ahead" the coal in the tender so that it will always be handy. Only  $17\frac{1}{2}$  tons of coal and 14,000 gallons of water are carried, as compared with 20 tons and 16,000 gallons provided for No. 1401. As the two are to be used in the same service and on the same division, between Oneonta and Mechanicville, this decrease gives an idea of the anticipated economy expected from the new locomotive.

Due to this decrease in load the tender is provided with only a four-wheeled Economy truck at the forward end while a six-wheeled "auxiliary locomotive" booster supports the rear end. A cast steel underframe is used on the tender. The total loaded weight of engine and tender is 633,500 pounds of which 300,000 are on the drivers.

next logical step in the development of this type of power. It is an outstanding example of patient application of fundamental engineering principles in the solution of a problem.

"Before you can be forgiven for your sins," said the kindly little priest to the dying man, "you must forgive all your enemies."

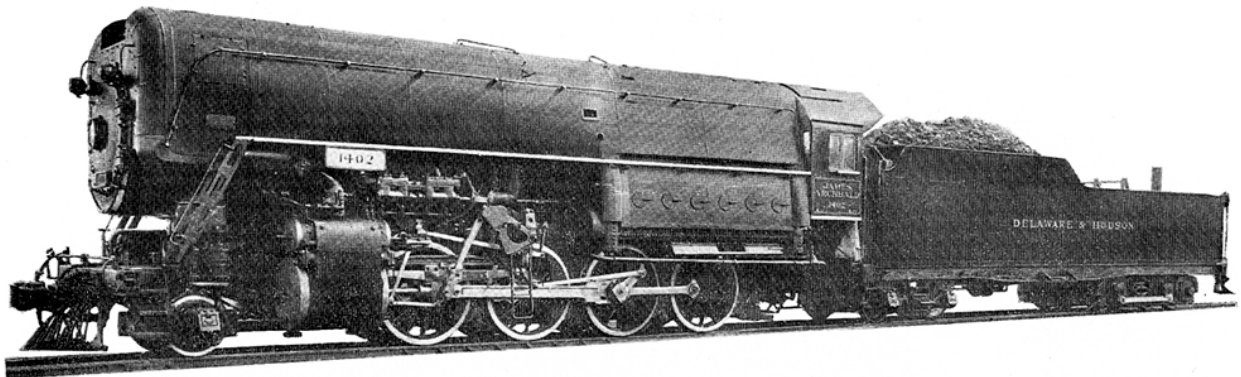
"I haven't an enemy in the world," replied the old Spaniard.

"What?" asked the amazed priest, who knew something of the life of the dying man,—"no enemies?"

"Not an enemy in the world," replied the dying man, "I killed the last one day before yesterday."—Clipped.



Here is the official company portrait of the *James Archbald* that is presented in *Motive Power, Passenger, Freight and Work Equipment, 1926-36 Delaware and Hudson*, p.32



JAMES ARCHBALD

Built by American Locomotive Company in 1930. Type 2-8-0. Gauge of Track  $4'8\frac{1}{2}"$ . Cylinders, Diameter High Pressure  $20\frac{1}{2}"$ , Low Pressure  $35\frac{1}{2}"$ , Stroke 32". Driving Wheel Diameter 63". Boiler, Water Tube Type, Diameter  $68-1\frac{1}{16}"$ , Pressure 500 Pounds. Fire Box, Length  $151-15\frac{1}{16}"$ , Width  $77-\frac{5}{8}"$ . Tubes, Superheater 52, Diameter  $5\frac{1}{2}"$ , Length 15'0", Regular 155, Diameter 2", Length 15'0". Wheel Base, Driving 18'0", Engine 29'0", Engine and Tender  $80\frac{1}{2}"$ . Weight in Working Order: Leading Truck 56000 Pounds, Driving 300000 Pounds, Engine 356000 Pounds, Engine and Tender 582600 Pounds. Fuel, Bituminous. Heating Surface: Tubes 1209, Flues 1116, Fire Box 1048, Arch Tubes 66, Total 3439 Square Feet, Superheater 1037 Square Feet. Tractive Power: Simple at 500 Pounds Boiler Pressure 85800 Pounds, Compound at 500 Pounds Boiler Pressure 71600 Pounds. Tender Booster at 250 Pounds Boiler Pressure 18000 Pounds. Tender Capacity, Water 14000 Gallons, Fuel  $17\frac{1}{2}$  Tons.



Here is a photograph of the James Archbald (No. 1402) that is in the Alan G. Dustin collection of the Carbondale D&H Transportation Museum. The note attached to this photograph there reads as follows: "D&H #1402, the 'James Archbald' third locomotive in a series of high pressure experimentals. Built: April 1, 1930. Withdrawn from service: 1935. Scrapped, June, 1942"

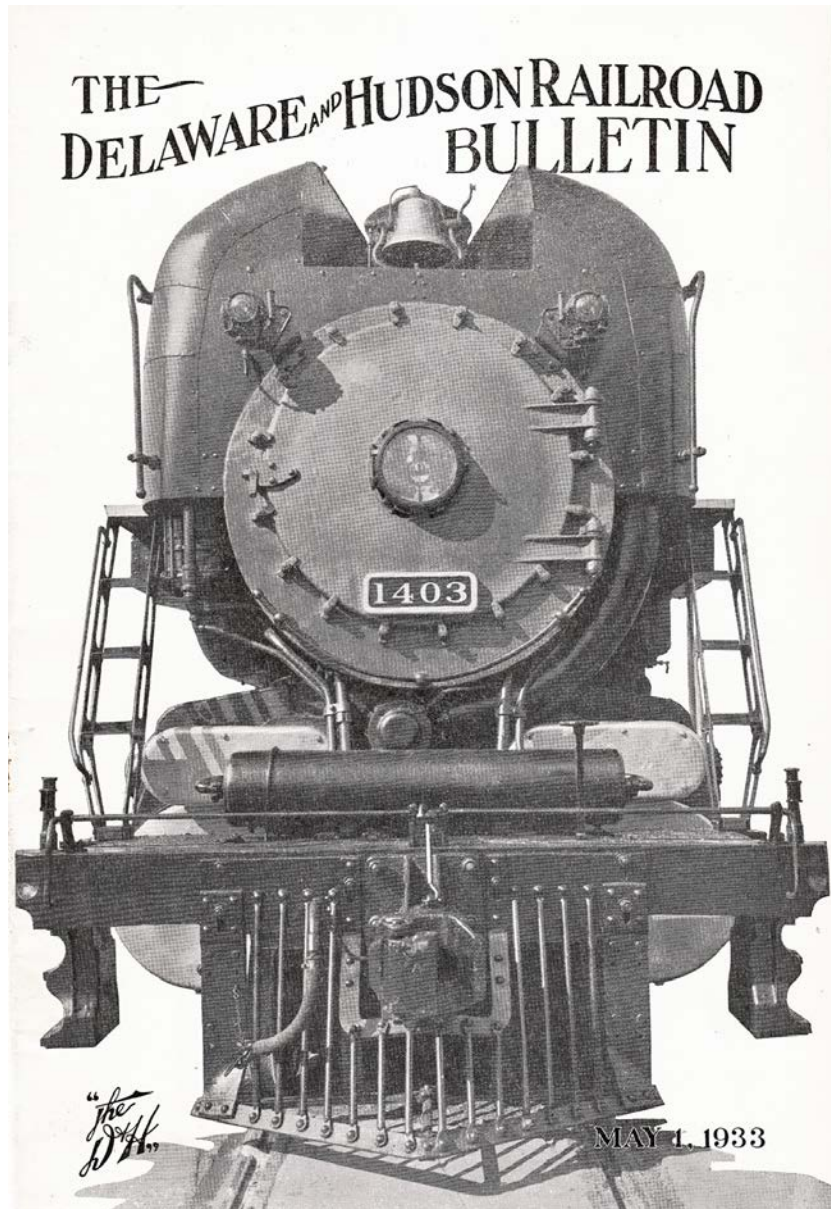


*D&H No. 1402 James Archbald*

**No. 1403:**

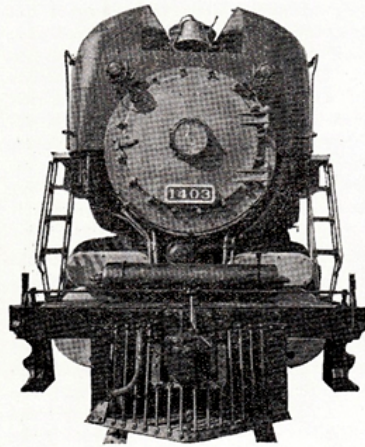
--the **L. F. Loree** : the first and only 4-cylinder, triple expansion, 500-pound-pressure, poppet-valved, non-articulated compound steam locomotive in the world; 4-8-0 made by ALCo, delivered in 1933, the only locomotive built in America in 1933

The L. F. Loree is the cover photo on the May 1, 1933 issue of *The Delaware and Hudson Railroad Bulletin*:





There is also a substantial article on the L. F. Loree, titled "First in the World!," in the May 1, 1933 issue of *The Delaware and Hudson Railroad Bulletin*, pp.69-73, 78. Here is that article:



## First in the World!

Delaware and Hudson Locomotive No. 1403, Four-cylinder, Triple-expansion, Non-articulated Compound, with Poppet Valves, has Hauling Capacity of a Mallet.

**P**OSSESSED of the "brute strength" of a Mallet, yet with a modest appetite for coal and water, Delaware and Hudson locomotive No. 1403 stands forth as "something new under the sun." Named *L. F. Loree*, in honor of the man whose faith in the future of steam railroads has never been shaken and whose interest in locomotive development has made its construction possible, the 1403 is the first and only four-cylinder, triple-expansion, non-articulated compound steam locomotive in the world.

To the railroader that description is quite clear but, for the sake of the other readers of *The Bulletin*, this means that:

1. The locomotive has four cylinders instead of the usual two. The use of this number of cylinders is not, of itself, a new feature as our 1500-and 1600-class Mallets all have four cylinders. On those classes, as on other locomotives of similar design, the rigid wheel base is divided into two sections connected by a flexible joint, each pair of cylinders operating in connection with a separate set of three or four pairs of driving wheels. In other words, two separate engines connected by a joint, hence called "articulated."

The 1403 has four cylinders, one of which is located at each corner of the machine, the pairs on either side being connected through individual pistons, crossheads and driving rods, to a single main crank-pin. Alloy steels are used throughout the entire locomotive to provide additional strength without increased weight.

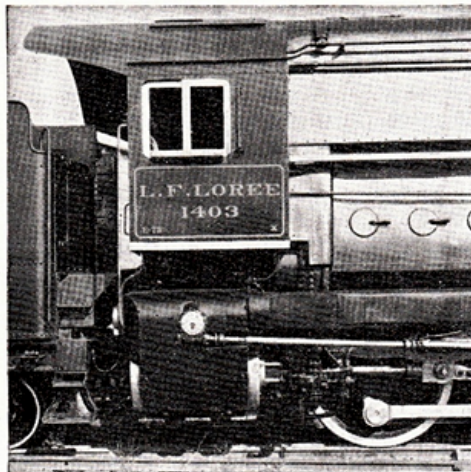
2. Steam at 500 pounds per square inch pressure passes from the boiler through a superheater

and thence through the throttle valve and a specially designed steam pipe, to the high pressure cylinder, located below the cab on the right side. This pipe is corrugated to allow for expansion and contraction with the changes in temperature to which it is exposed. After having expanded and pushed the piston through the length of the cylinder, the steam then passes to the intermediate pressure cylinder which is below the cab on the left side. Again the same steam that moved the high-pressure piston now propels the intermediate piston as the steam expands a second time while doing more work. By this time the pressure has been so much reduced that the quantity of steam which was needed to drive the twenty-inch high-pressure piston fills the two 33-inch low-pressure cylinders. Following this third expansion, from which the "triple expansion" designation is derived, the steam is exhausted up the smoke stack at a pressure of 3 to 5 pounds above that of the atmosphere, as compared with 7 to 10 for older types of power.

3. Following the practice of the Delaware and Hudson designers of earlier experimental freight power the consolidation type of wheel arrangement would have been followed, in order to have the greatest possible proportion of the weight on the driving wheels, but for the fact that the two large low-pressure cylinders at the front were too heavy to be carried on a single lead truck axle. Consequently, a 4-8-0 arrangement was utilized. Thus the 1403, although as powerful as a Mallet with 16 drivers, has only eight.

Before steam can be used efficiently it is essential that it be generated economically. It is for this reason that the boiler pressure has been progressively increased in the Delaware and Hudson's experimental locomotives. The *Horatio Allen* carries 350 pounds as compared with the usual 225 to 250, while in the 1401 this was increased to 400 pounds and the 1402 and 1403 carry 500 pounds pressure. This is generated in a boiler having a water tube firebox,





*High Pressure Cylinder Under Cab. Injector just ahead of cylinder*

vertical tubes, the top and bottom ends of which enter steel drums, forming the sides of the firebox.

In the construction of the 1403 these drums are seamless forgings which are machined eccentric so that one portion of the wall is left thicker than the rest. In this thick portion are drilled the holes through which the tubes enter the drums, extra material thus being provided to increase the strength of the "bridges" between the adjacent holes. Following standard Delaware and Hudson practice the firebox is of the wide type, extending out over the rear drivers. The grate area, less than 80 square feet in a locomotive of this power, is an indication of the degree of efficiency at which the machine is expected to operate.

At the present time the thermal efficiency of an ordinary locomotive is about  $5\frac{1}{2}$  to 6 per cent, that is, only that proportion of the energy present in the coal that is fed into the firebox is transformed into power at the drawbar for pulling a train. Theoretically it is possible to increase this figure to 17 or 18 per cent. To approach more nearly this degree of efficiency is the goal of the Delaware and Hudson management, and the reason for its continued experimentation along these lines.

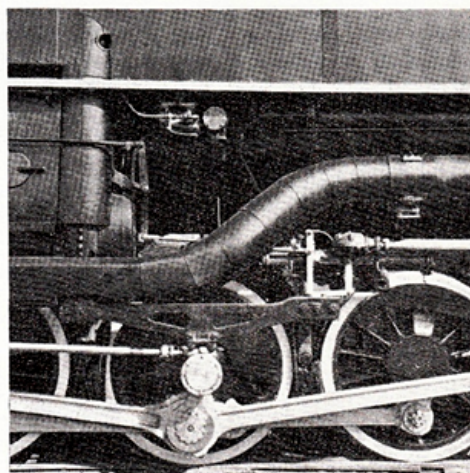
In 1924, at the dedication of the *Horatio Allen*, No. 1400, President Loree expressed the hope that that locomotive would "develop one-third more haulage capacity, with one-third less consumption of fuel and water, than the corresponding Consolidation locomotive." This hope was realized and the 1403 is expected to continue this improvement along these lines.

One of the major features of the locomotive is

the valve mechanism. From the experience had with poppet valves on locomotives 925 and 651, it was decided to apply the same type of valve to the 1403. The poppet valves on both locomotives previously equipped were actuated by Walschaert motion and oscillating camshafts, while in the design of the 1403 a rotary cam gear is employed. This arrangement lends itself most efficiently to the triple expansion requirements, in the correlating of the movements of the valves of the four cylinders.

The rotary drive is obtained by means of cranks secured to the main pins which to all appearances are the familiar eccentric cranks of the Walschaert gear, but as applied to the 1403 the free end of each crank is set exactly in line with the center of the main axle, thereby producing the rotary motion necessary for the valve cam shaft operation. The valves of the high-pressure and intermediate pressure cylinders are actuated from the right main crank pin, while the left main crank pin controls the movements of the valves for the two low-pressure cylinders. In this manner all the valves are primarily actuated by the rotation of a single shaft, the main axle, and each movement of the valves in the high pressure cylinder is attended by a definite predetermined movement of the valves in the other cylinders, thereby securing proper correlation of the work in the different cylinders.

Some idea of the capacity of the poppet valves may be had when their dimensions are known.



*Main Driving Wheel, Showing Non-eccentric Crank and Valve Gear Drive Shaft. Above is Reverse Gear and Portion of High Pressure Steam Pipe Covered with Insulation and Jacketed.*



For the high pressure cylinder both intake and exhaust valves are 9 inches in diameter with a maximum lift of one inch. The intake valve lift may be reduced to one-half inch but the minimum for the exhaust valve is three-quarters of an inch. Similarly, the intake valve of the intermediate pressure cylinder is 9 inches in diameter with an inch maximum and a half-inch minimum lift. The exhaust valve, which is  $9\frac{1}{2}$  inches in diameter, has lift limits of  $1\frac{1}{16}$  and  $\frac{3}{4}$  inches. For the low pressure cylinders  $9\frac{1}{2}$ -inch intake and 9-inch exhaust valves are provided, the former having lift limits of  $1\frac{1}{16}$  and  $\frac{3}{4}$  inches, and the latter 1-inch and  $\frac{3}{4}$  inch.

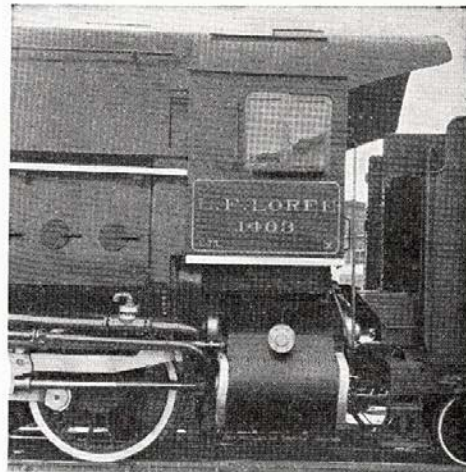
The power reverse gear is of special design and provides cutoff in forward motion—full gear, 66%, 58%, 50%, 43% and 36% as well as a drifting position, and in backward motion—full gear, 66% and 36%.

The main driving wheels are of box section design, which, in addition to being lighter in weight, are less likely to develop cracks than those of the old type. As the Delaware and Hudson was the first road to apply roller bearings to the main driving axle of a locomotive, it is significant that this type has been adopted for use on the 1403.

Another innovation is the design of the lead truck, journal boxes and side frames of which are cast integral to effect a considerable saving in weight. Lubrication of the wheel bearings is done through handholes in the pedestal legs at the front and rear



One of the two Low Pressure Cylinders. Special Guide Bar Mountings are used to Allow for Expansion and Contraction. Air Compressor concealed by jacket, as is smokestack.



Intermediate Pressure Cylinder. Note simplicity of valve gear

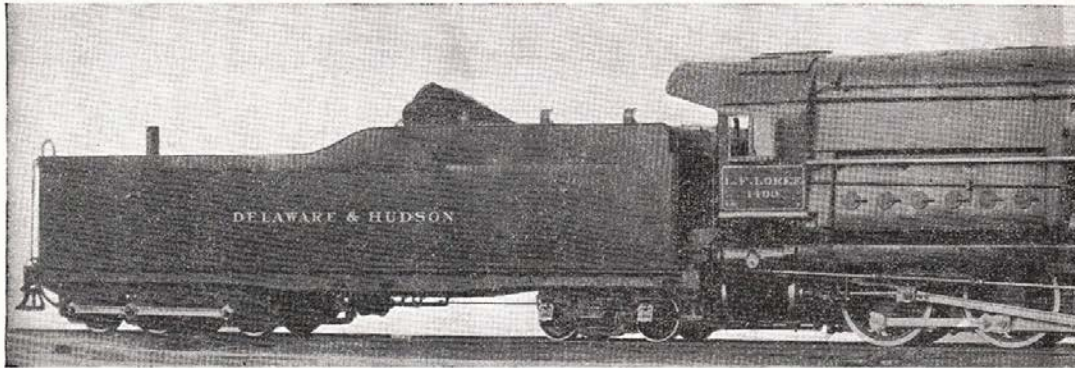
of the truck, it being unnecessary to remove any bolts or keys to get at the bearings. The journals are  $7\frac{1}{2}$  by 13 inches and the oil cellars come up as high as the center of the axle at the rear while the front edge has a protruding lip to insure the retention of waste and oil in their proper places. Additional features of the truck are its 56-inch springs and the lateral resistance device, both of which should improve the riding qualities of the locomotive.

In conformity with the Delaware and Hudson practice of concealing the piping and various auxiliary units beneath the jacket of the boiler, even the air compressor of the 1403 is hidden, although mounted on the right side of the smoke box. Radiating fins applied to the air pipe to the main reservoir facilitate the cooling of the compressed air to such an extent that only half as much pipe is used here as would normally be required.

Mounted below the left running board is the Dabeg mechanical feed water heater pump, driven from the crosshead, which supplies the boiler. A specially designed injector, which will operate against any pressure of steam from 100 to 500 pounds, is mounted below the cab on the right side as an auxiliary water supply.

Lubrication is supplied by a 26-feed mechanical lubricator, supplemented by a hydrostatic lubricator which supplies the water- and air-pumps and other auxiliaries.

To fully appreciate the hugeness of the 1403, the excellent proportions of which fail to give a real impression of its size, it is necessary to enter



the cab. In proportion to the rest of the locomotive it seems so small that it is quite surprising to enter a "room" about seven feet square, and, with the exception of the comfortable seats of the crew, practically devoid of the usual paraphernalia that clutters up the "standing room." Even the pedals that control the operation of the fire-door are set into the floor conveniently near the fireman's station.

Beyond the addition of a pyrometer and a 1000 lb. steam gauge or two for determining the condition of the steam at various points in its travels through the machine, the controls are similar to those on the usual locomotive. Pneumatic operation of sanders, cylinder-cocks, bell-ringer, whistle, etc., is in accordance with standard practice. Only the fact that the boiler butt does not extend back into the cab at all and the three ventilators in the cab roof and two more in the rear are reminders of the care that has been taken to assure comfort for the crew despite the high temperatures within the machine.

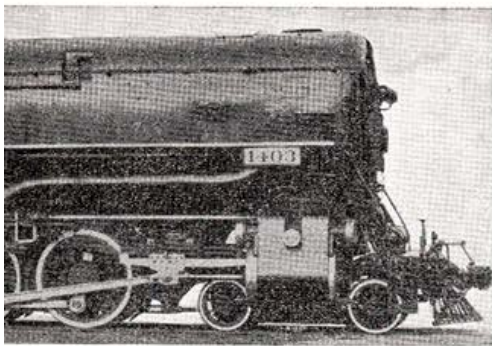
The capacity of the long, low tender, designed to avoid side sway at high speeds, is a further indication of the expected efficiency of the locomotive. It carries 14,000 gallons of water and 17.5 tons of coal, which, while in themselves goodly amounts, are but two-thirds of what would be provided for the conventional locomotive operating in the same service. The tender acts not only as a carrier of coal and water but as a second locomotive, its capacity being as great as that of the motive power of half a century ago. The rear truck is a Bethlehem Auxiliary Locomotive in which a pair of cylinders, using 500-pound steam direct from the boiler, drives, through gears and rods, the three axles of the truck. At starting or at speeds under

10 miles per hour this arrangement adds 18,000 pounds to the 75,000 tractive effort of the locomotive when operated as a compound. By introducing high pressure steam into all of the four cylinders of the locomotive its tractive effort may be increased to 90,000 pounds. This, with the additional power of the booster, gives a total force of 108,000 pounds, which is only equaled by the heavy Mallets.

The total loaded weight of the locomotive and tender is 669,000 pounds. Of this the locomotive, with 69,000 pounds on the engine truck and 313,000 on the 63-inch diameter driving wheels, totals 382,000, while the tender, full of coal and water, weighs 287,000. The efficiency of the 1403 is once more apparent when it is considered that many less powerful locomotives of the con-







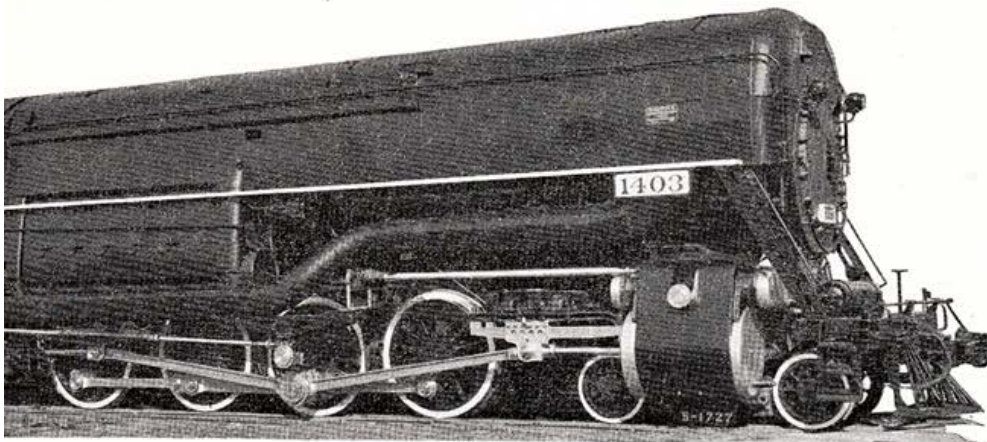
ventional design weigh, without tenders, as much as 400,000 pounds, of which only about 275,000 is available for holding the driving wheels down on the rails for the purpose of transmitting power.

For ready reference a tabulation of some of the principal data descriptive of the locomotive follows:

Type	4-8-0
Wt. on Engine Truck, lbs	69,000
Wt. on Drivers	313,000
Wt., Total	382,000
Wt. Tender, light	125,300
Wt. Tender, 2/3 loaded	226,400
Wt. Eng. and Tender	608,400
Steam Pressure, lbs.	500
Steam Pressure, Aux. Loco.	500
Tractive Power, Simple, lbs.	90,000
Tractive Power, Compound	75,000

Tractive Power, Aux. Loco.	18,000
Water Tubes	260-2½" O. D.
	6-3" O. D.
Flues	155-2"
	52-5½"
Firebox, Length, in.	140
Firebox, Width, in.	77¾
Brick Arch	Yes
Combustion Chamber	None
Heating Surface, Flues & Tubes, sq. ft.	2325
Heating Surface, Arch Tubes	61
Heating Surface, Firebox	965
Evap. Heat, Surf., Total	3351
Combined Heat. Surf.	4427
Heat. Surf. Superheater	1076
Grate Area, sq. ft.	75.8
Fuel	Bituminous Coal
Frame Centers, inches	39
Cylinder Centers	93
Cylinder Dimensions, inches:	
High Pressure	20 x 32
Intermediate	27½ x 32
Low (2)	33 x 32
Auxiliary Locomotive (2)	8½ x 10
Length of Main Rods, F. & B., in.	132
Driving Wheel Base	18 ft. 10 in.
Engine Wheel Base	33 ft. 9 in.
Length Overall	95 ft. 5 in.
Height above rail	15 ft. 7½ in.

(Concluded on Page 78)



## First in the World!

(Continued on page 73)

Wheel Diameters, in.	
Engine Truck	33
Drivers	63
Tender, front truck	33
Aux. Locomotive	36
Journal Sizes, in.	
Engine Truck	7½ x 13
Drivers, except Main	11 x 14
Drivers, Main (Roller Bearings)	13 x 14
Tender,	6½ x 12
Ratios:	
Wt. on Drivers/Tractive Power, Simple	3.48
Wt. on Drivers/Tractive Power Compound	4.17
Total Evap. Heat. Surf./Cylinder Volume	576.76
Firebox Heat. Surf./Total Evap. Heat. Surf.	30.62
Total Firebox Heat. Surf./Grate Area	7.39
Grate Area/Cylinder Volume	13.06
Total Evap. Heat. Surf./Grate Area	44.21
Combined Heat. Surf./Grate Area	58.40
Rated Tractive Power/Evap. Heat. Surf., Simple	26.86
Rated Tractive Power/Evap. Heat. Surf., Compound	22.38

Note: Cylinder volume used in computations is that of the single high pressure cylinder.

## Monkey Business

ALTHOUGH not introduced as such, a little item printed in *The Carnation* may, perhaps, be construed as supporting Darwin's theory concerning the descent of man from the monkeys. At any rate, here it is:

A certain professor, who spent almost his entire life studying the animals, told an interviewer once that monkeys would gather round a fire in the jungle and, by every means within their power, show that they truly enjoyed it. But never, by any chance, would one of them put a stick of wood on the blaze.

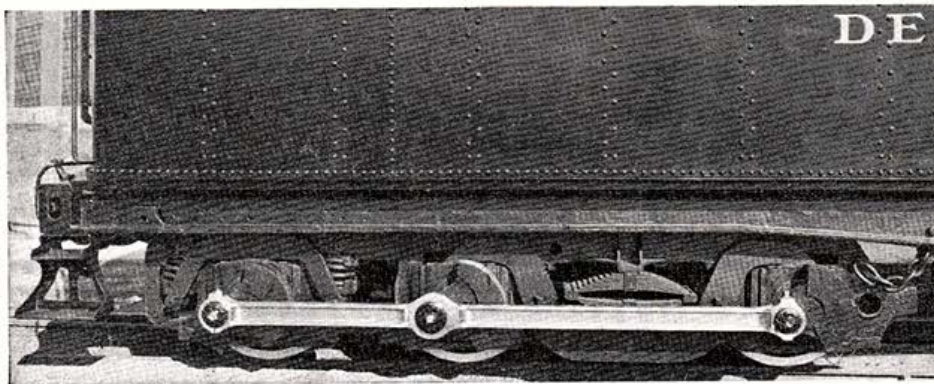
How true this is of a lot of people we know! They are glad to enjoy all the benefits that they can gather from someone else's work, but extremely careful to see that they, by no chance, exert themselves. They are great believers in cooperation and get a lot out of it as long as the other fellow does it.

## Machines and Men

(Continued from page 74)

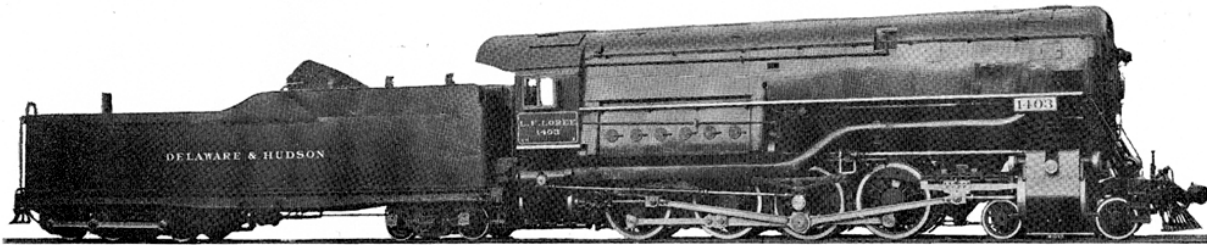
The machine must be paid, or paid for. There must be a return on the investment which often runs into hundreds of thousands of dollars.

We have had machines in industry for more than a century, gradually replacing men all the time. Yet, until very recently, they have all been absorbed elsewhere. So they will be again, as soon as the normal course of events can be resumed, at which time it is probable that every available locomotive will be needed.



Type of Auxiliary Locomotive used on the "L. F. LOREE"

Here is the official portrait of the L. F. Loree that is published in *Motive Power, Passenger, Freight and Work Equipment, 1926-1936 Delaware and Hudson. Board of Directors Inspection of Lines* : : June 4<sup>th</sup> to June 7<sup>th</sup>, 1936, p. 33:



L. F. LOREE

Built by American Locomotive Company in 1933. Type 4-8-0. Gauge of Track 4'8½". Cylinders, Diameter High Pressure 20", Intermediate Pressure 27½", Low Pressure 33", Stroke 32". Driving Wheel Diameter 63". Boiler, Water Tube Type, Diameter 68-1/16", Pressure 500 Pounds. Fire Box, Length 139-15/16", Width 77¾". Tubes, Superheater 52, Diameter 5½", Length 15'0", Regular 155, Diameter 2", Length 15'0". Wheel Base, Driving 18'10", Engine 33'9", Engine and Tender 83'8¼". Weight in Working Order: Leading Truck 69000 Pounds, Driving 313000 Pounds, Engine 382000 Pounds, Engine and Tender 608400 Pounds. Fuel, Bituminous. Heating Surface: Tubes 1209, Flues 1116, Fire Box 965, Arch Tubes 61, Total 3351 Square Feet, Superheater 1076 Square Feet. Tractive Power: Simple at 500 Pounds Boiler Pressure 91500 Pounds, Triple at 500 Pounds Boiler Pressure 76200 Pounds. Tender Booster at 500 Pounds Boiler Pressure 18000 Pounds. Tender Capacity, Water 14000 Gallons, Fuel 17½ Tons. Equipped with Rotary Type Poppet Valves, Roller Bearings on Main Axle Boxes, Roller Bearings on Side and Main Rod Bearings of Main Crank Pin.

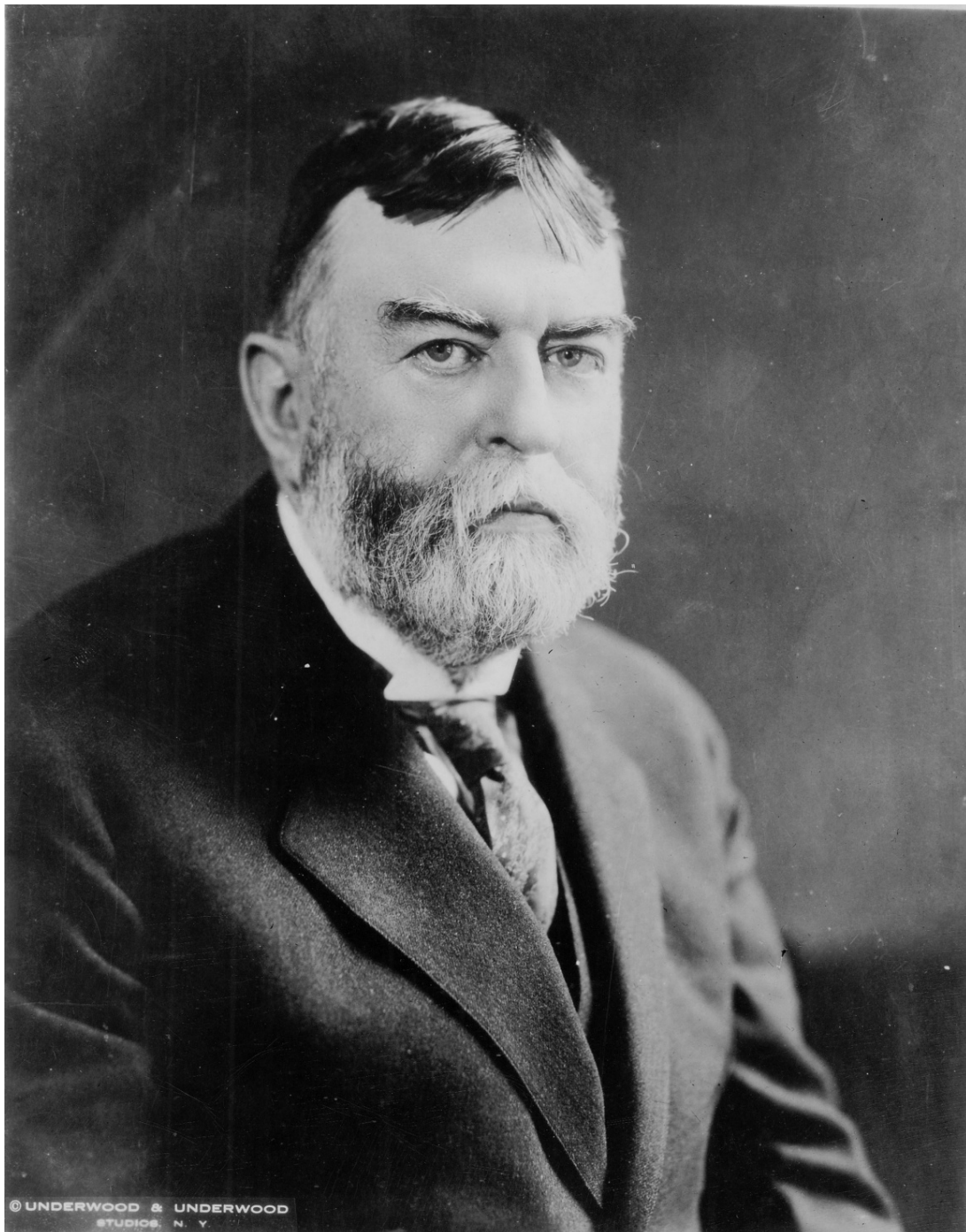
L. F. Loree, the man, always an advocate of bigger and better motive power, is interesting in a dozen ways. Not surprisingly, he was a Scot. He served as the eighth president of the D&H (April 10, 1907—March 31, 1938) for 31 tumultuous years. Here is a photograph of Loree as a young man:



Leonor Fresnel Loree



Here is a photograph by Underwood & Underwood Studios, N.Y, of L. F. Loree. This photograph is in the Alan G. Dustin Collection of the Carbondale D&H Transportation Museum.



Leonor Fresnel Loree

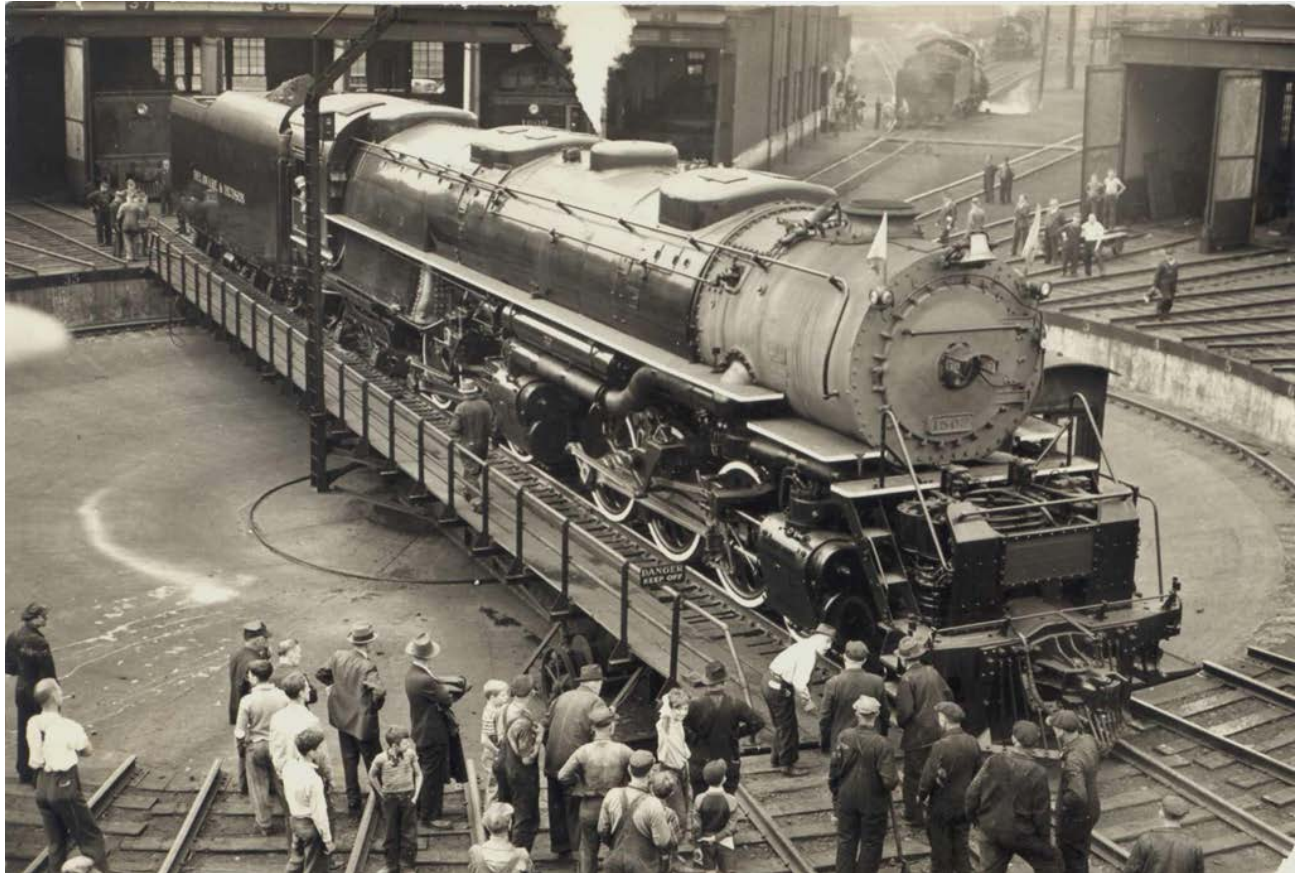
## Summary Biographical Portrait of

### **Leonor Fresnel Loree**

With 21 years of service with the Pennsylvania Railroad under his belt, and having served as president of the Baltimore and Ohio Railroad Company for over three years and a term as president of the Rock Island Company, and with three degrees from Rutgers College to his name (BS, 1877; MS, 1880; Civil Engineering degree, 1896), Leonor Fresnel Loree, at age 48, became the eighth president of the D&H on April 10, 1907. He was a strong advocate of upgrading and improving every aspect of the D&H transportation system. The modernization of D&H motive power was his passion. In 1910 he ordered six 0-8-8-0 Mallet compounds from ALCo; in 1911-1912, he ordered seven more. In 1914, he purchased ten Pacifics from ALCo for the Montreal passenger service. In 1916, *No. 1200* (E-6, 2-8-0, 63,950 pounds of tractive effort) was made by ALCo for the D&H. The following year, 1917, Loree ordered 20 E-6a engines from ALCo. In that same year, Loree was awarded a Doctor of Law degree from Rutgers. From the early 20s to the mid-30s, under his direction, more than 100 D&H locomotives were rebuilt by the D&H: chrome plating was added to boiler jackets, smoke deflectors were added to the 10 Pacifics, all locomotives got a coat of black enamel; roller bearings were added to driver journals. And then came the four magnificent “experimentals”: in 1924, the *Horatio Allen*, No. 1400; in 1927, the *John B. Jervis*, No. 1401; in 1930, the *James Archbald*, No. 1402; and in 1933, the *L. F. Loree*, No. 1403. In the same year that No. 1403 made its debut, Loree was awarded a Doctor of Engineering from Rensselaer Polytechnic Institute. What an extraordinary man! L. F. Loree, a principal founder of The Newcomen Society of North America, a learned society promoting engineering, technology, and free enterprise. L. F. Loree, the P. T. Barnum of railroading in America in the early twentieth century, a giant of a man, whose vision guided the D&H through thirty-one tumultuous years, ending on May 16, 1938, when Joseph H. Nuelle became the ninth president of the D&H. On September 6, 1940, L. F. Loree died at West Orange, NJ.

**No. 1502:**

*D&H No 1502 on the Turntable in the Carbondale Roundhouse, July 1940.* Photo in the collection of the Carbondale Historical Society.



*D&H No 1502 on the Turntable in the Carbondale Roundhouse, July 1940.*



**No. 1507:**



"DELAWARE & HUDSON 1507 (Class J, 4-6-6-4 Challenger) sparkles in Carbondale, Pa. after an easy run down from the Colonie Shops and major overhaul, September 15, 1951." Photo by Bob Collins. Post card in the collection of the Carbondale D&H Transportation Museum.

**No. 1512:**

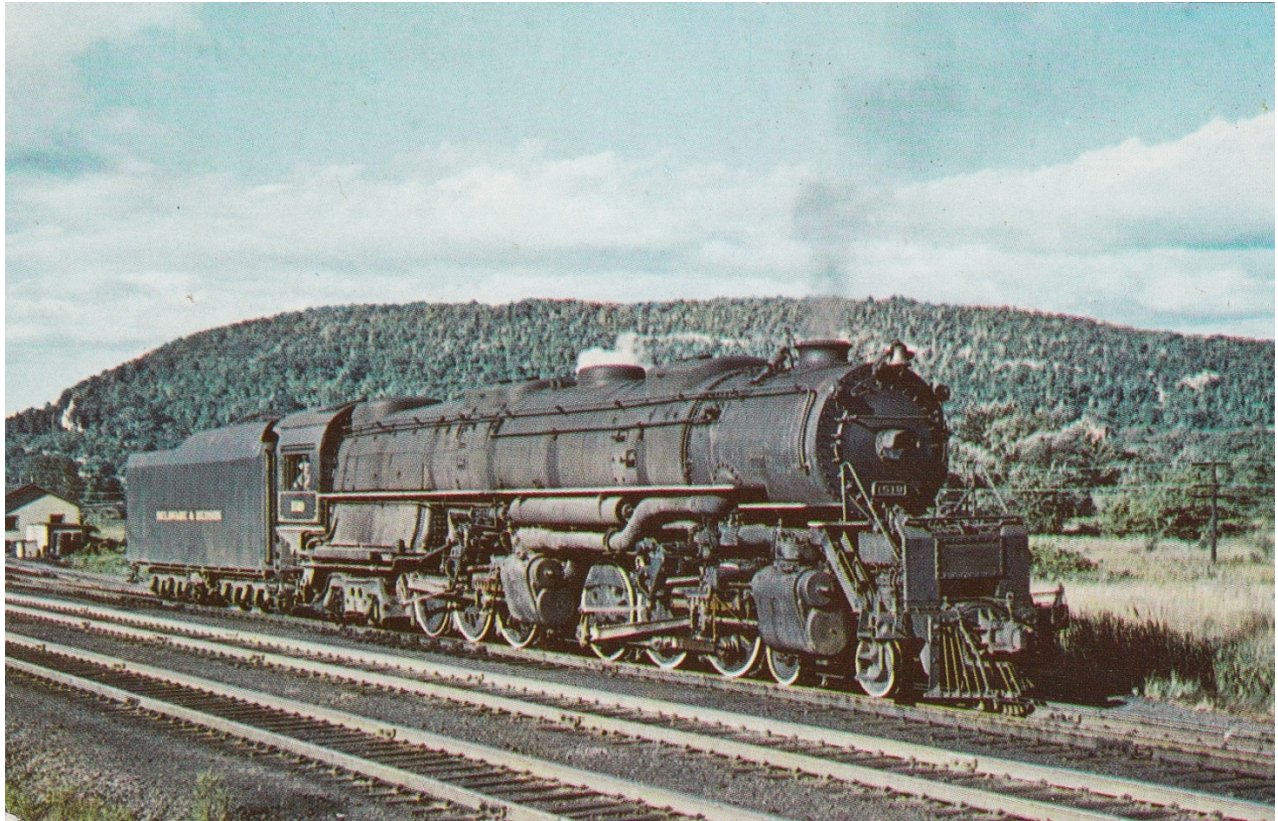
D&H Locomotive *No. 1512*, photograph by Gordon R. Roth, 97 Prince Street, Rochester 5, N. Y., anonymous donation to the Carbondale Historical Society in August 2015.



*D&H No. 1512*

**No. 1519:**

"D&H class J 4-6-6-4 Challenger at Whitehall, NY, August 17, 1952." Photo by Bob Collins.  
"These 1500's were turned in Carbondale for the run south as they were too large to continue north." Post card in the collection of the Carbondale Historical Society.



*D&H No. 1519*



**No. 1524:**



*The last D&H engine on its way from Carbondale to Philadelphia for scrap, October 26, 1953. Photograph by the Carbondale photographer Cramer, in the collection of the Carbondale D&H Transportation Museum. In this photo, there are eleven men standing beside No. 1524. They are, from left: M. J. McDonough, Pennsylvania Division Superintendent; Edward Foley, general yardmaster; K. F. Spiegel, director of car service; Robert Rhodes, yardmaster; Thomas Murphy, yardmaster; Arnold Quinney, assistant trainmaster; Stanley Farrell, road foreman of engines; John Gilmartin, assistant foreman of engines; Ezra Swartz, chief dispatcher; John Mannion, assistant trainmaster, and Frederick Mitchel, yardmaster.*

## No. 1525:

On April 13, 2015, Greg Flynn posted the flyer, shown below, on the Delaware and Hudson Rail Road *Facebook* page with the following text: "This notice, from 1943, features D&H J-class 4-6-6-4 Challenger 1525, Alco c/n 70011, one of 15 built for the D&H in 1942. Compared to other classes of steam on the D&H, the Challengers would have very short careers. The 1525 would go to Luria Bros. for scrap in 1953, swept aside by the newly arrived tide of RS-3's from ALCO."

# TIME PACE

ON THE  
**DELAWARE & HUDSON**



Fifteen more modern high-powered articulated freight locomotives have been recently delivered to the Delaware & Hudson—making a fleet of 35 of these high-speed, heavy-tonnage locomotives which ALCO has delivered to this road since July, 1940.

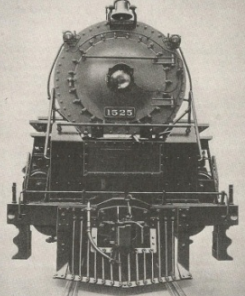
*Locomotive Characteristics*

Weight on Drivers	406,900 lb.
Weight of Engine	897,000 lb.
Cylinders (Four)	20½ x 32 ins.
Diameter of Drivers	69 ins.
Boiler Pressure	288 lb.
Tractive Power	84,400 lb.
Tender Capacity—Water	22,800 gals.
Tender Capacity—Fuel	26 tons

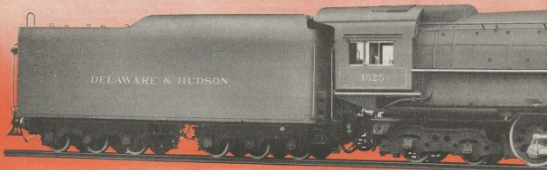
**AMERICAN LOCOMOTIVE**  
Manufacturers of Mobile Power  
Steam, Diesel and Electric Locomotives, Marine Diesels,  
Tanks, Gun Carriages and other Ordnance



# UP GOES THE WAR



FOR VICTORY BUY  
WAR BONDS  
AND STAMPS



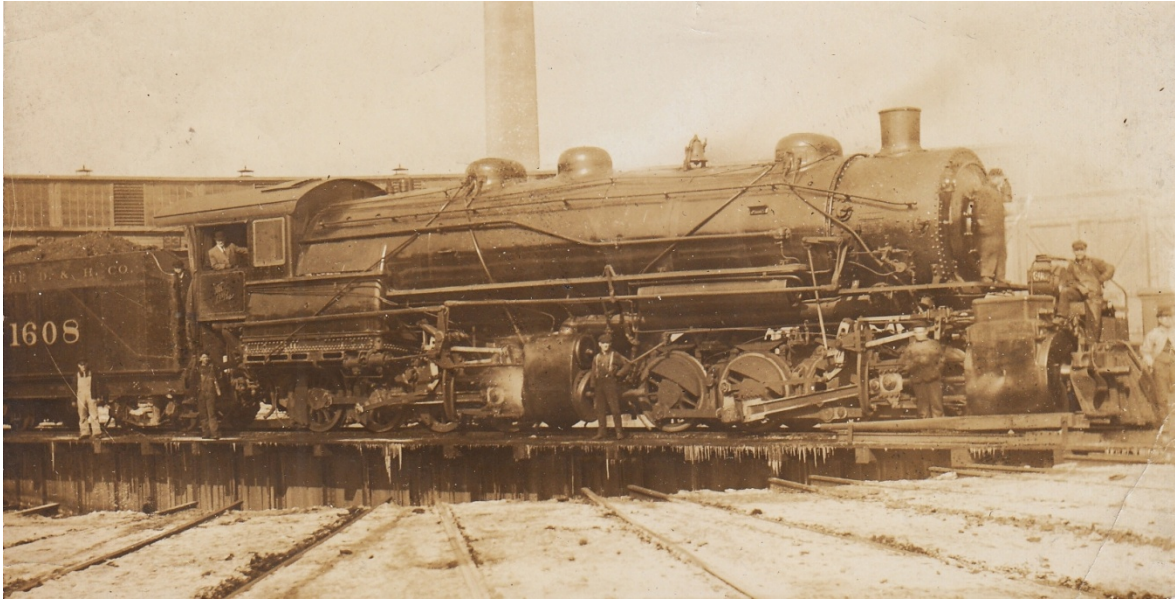
**No. 1539:**



*Challenger 1539 Richmondville, July 30, 1948. Posted by Steven Brown on Facebook on February 11, 2016.*



**No. 1608:**



"D&H 1608 on Turntable in D&H Roundhouse in Carbondale," photograph in the collection of the Carbondale D&H Transportation Museum.

George H. Dimock, D&H engineer.

GEORGE H. DIMOCK has been in the employ of the Delaware & Hudson Canal Company since a youth of fifteen years, and for the past eleven years has held the responsible position of engineer. A native of Pennsylvania, his home has been in Carbondale since 1865, and during all these years he has shown himself to be an honest, industrious and energetic man, fully worthy of the respect of his fellowmen. He is an active member of the Brotherhood of Locomotive Engineers, in which he carries a \$3,000 life and accident insurance. Fraternally he is connected with the Junior Order of American Mechanics and at one time affiliated with the Ancient Order of Odd Fellows, but is now demitted.

The father of our subject, George D. Dimock, was born in Wayne County, Pa., and in 1865 removed to Carbondale, where he now makes his home in Canaan Street. Throughout his entire active life, a period of more than fifty years, he has been in the employ of the Delaware & Hudson Canal Company, and during much of this time has worked as a car builder for the Gravity road. Though now seventy-six years of age, he is still quite hale and strong. His father died when forty years of age, but his mother, Mrs. Betsy Dimock, is still living, at the advanced age of ninety-six. Our subject has in his possession a picture, with her as the head, representing five generations.

By his marriage to Sarah Swackhamer, a native of New Jersey, George D. Dimock had four sons and two daughters, namely: Benjamin, who is employed as car repairer for the Delaware & Hudson Company; William W., foreman on the Gravity road; Louisa, wife of Warren Ellis, of Carbondale; George H.; Emma, Mrs. John Copeland, of this city; and John W., who is engaged in the gents' furnishing business here. George H. was born in Wayne County, Pa.,

George D. Dimock was a car builder for the Gravity Railroad.

George D. Dimock married Sarah Swackhamer.

George H. Dimock  
worked as a  
brakeman on the  
Gravity Railroad.

April 18, 1850, and in boyhood attended school a short time, but his mind was too active for the dull routine of text book work, and as soon as possible he entered the great world of activity. In October, 1865, he began to work on the Delaware & Hudson Railroad and for four years was employed as brakeman on the Gravity road, after which he was fireman on the steam road for six years. He was then promoted to his present position of engineer.

In 1869 Mr. Dimock married Sarah Blanchard, who died in 1873, leaving two children: Charles E., who married Anna Norris and has three children, Bessie, Eleanor and Gladys; and Sarah E., who married Horace Frear and has one son, Carroll. In July, 1875, Mr. Dimock married Johanna Hunter, who was born in Ayr, Scotland, in October, 1853. She was brought to this country at the age of eleven years by her parents and grew to womanhood here, receiving an excellent education. She is a lady of broad information and kind heart, interested in charitable work and active in the Woman's Relief Corps. Five children were born of this union, of whom the eldest died in infancy, and the third, Albert, died at the age of four years and eight months. The others are William H., Marion E. and Margaret H., all of whom are in Carbondale. The family attend the Presbyterian Church and are interested in all religious enterprises.



The interest which Mrs. Dimock has shown in the Relief Corps and in all army matters is not unusual, when the fact of her father's patriotism is taken into consideration. Though not a native of this country, he was ever loyal to its welfare and aided in preserving its identity as a Union. In October, 1862, he enlisted in the service and was assigned to General Banks' division. From that time onward he saw much hard service, both upon the battle field and in long and forced marches. In the most perilous positions, however, his courage never failed him. He was a true soldier, strong to fight beneath the folds of the old flag. At last, ere yet victory had perched upon the banners of the Union, he gave his life for the sake of the cause he loved so well, dying at Salisbury, N. C., where he was held prisoner by the Confederates, January 29, 1865. He was one of the truest soldiers that the One Hundred and Sixty-second New York Infantry gave to the service, and his name deserves to be placed among those of our martyr patriots.

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(*Portrait and Biographical Record of Lackawanna County Pennsylvania*, 1897, pp. 236-237)

## Diesels

The D&H's first diesel was No. 3001, a DE-S 3000-class road-switcher, which was purchased by the D&H in May 1944 from ALCo. That fact we learned from the article titled "Better Late Than Never" by Richard Sanders Allen that was published in *Trains Magazine* in January 1959, and reprinted in the August 2016 issue of the *Bridge Line Historical Society Bulletin*, pp. 5-13. Therein, we read:

"... the first train [on the Sanford Lake extension of the Champlain & Sanford Railroad Company] went into Sanford Lake and out with a load of ilmenite on June 19, 1944. / Since steam operation was considered dangerous in the tinder-dry woods, the first and subsequent runs were assigned to the D&H's first diesel No. 3001, a DE-S 3000-class road-switcher which had been purchased from Alco a month earlier. Thus the Sanford Lake extension became the D&H's first step toward total dieselization. Those on the platform at North Creek that day little dreamed that it would be a scant six years before the Adirondack Branch's last steam engine would be pulling out on the Saratoga run as the first leg of a journey to the scrap heap." (p.10)

**No. 1216:**

*Delaware & Hudson No. 1216.* "One of two acquisitions by the Delaware & Hudson, Baldwin Sharknose No. 1216 has its official portrait taken at the railroad's Colonie, N.Y. shops. The two units, the other No. 1205, are welcome additions of traditional diesel motive power to the D&H roster. October 21, 1974. Delaware & Hudson Photo by Richard J. Allen" Post card in the collection of the Carbondale Historical Society.



*Delaware & Hudson No. 1216*

Here is a photo of No. 1216 that Chris O'Brien posted on the Delaware and Hudson Railroad Facebook page on September 10, 2015, with the following caption:

“Marv Davis, former Road Foreman of Engines D&H and B C O'Brien (Bernie was also a Foreman of Engines at D&H). I believe this was the 'President's special train from the 70's. I could be mistaken.”





Chris O'Brien posted on *Facebook* on September 10, 2015 the photo given below of Bernie O'Brien and Marv Davis:



*Bernie O'Brien and Marv Davis*

**No. 4041:**

"D&H Diesel No.4041, February 16, 1951, first diesel in Carbondale Roundhouse." Photo in the collection of the Carbondale Historical Society.



*D&H Diesel No. 4041*

**No. 5004:**

Jeremy Plant posted this photo of *No. 5004* on the Delaware and Hudson Railroad *Facebook* page on July 9, 2015, with the following caption:

“Before the 5004 lost its high short hood and the 300s were renumbered they lead a local from Whitehall into Mechanicville at Coons Crossing sometime in 1970.”

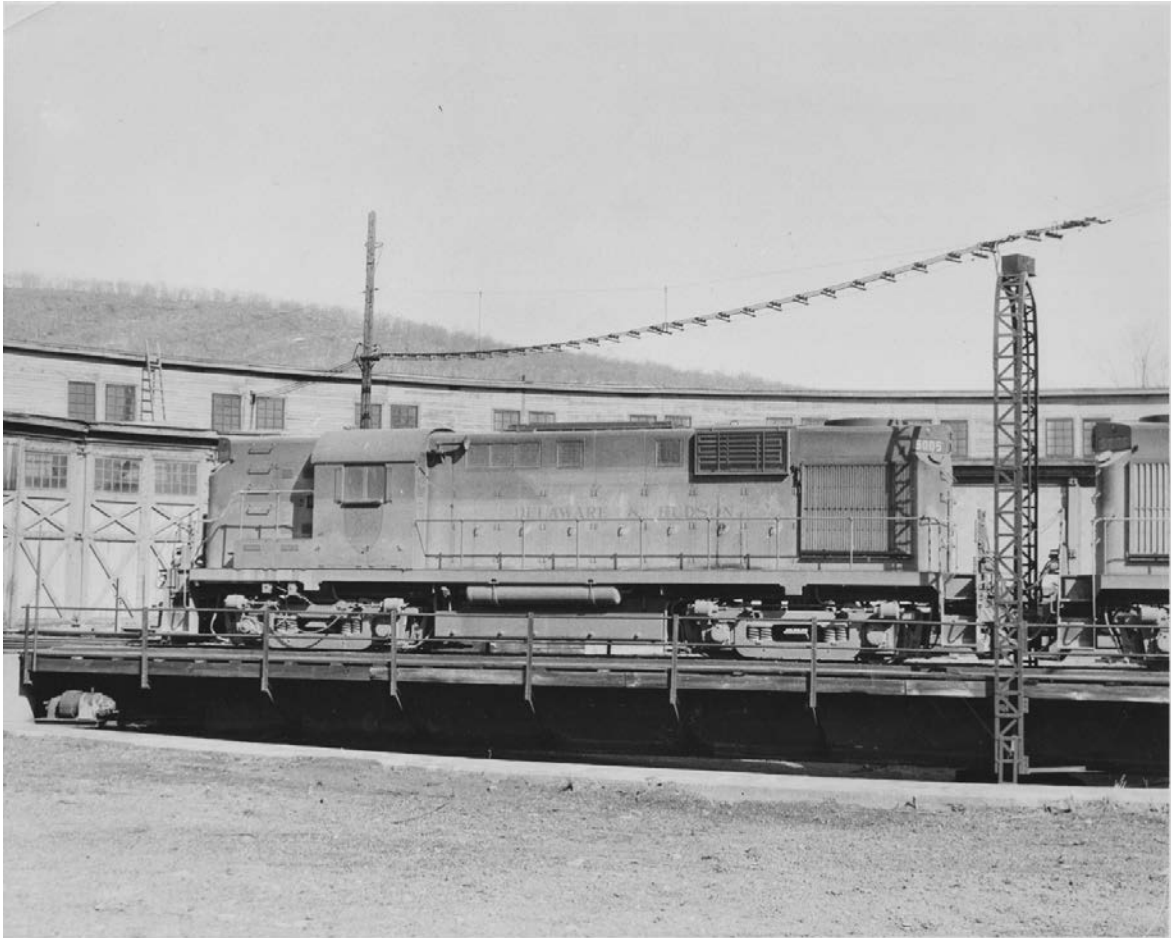


*D&H No. 5004*



**No. 5005:**

"Delaware & Hudson number 5005 at roundhouse in Binghamton, New York March 1966"  
Photo in the collection of the Carbondale D&H Transportation Museum.



*D&H No. 5005*

## Unidentified Engines and Related Matters

1.



John V. Buberniak, November 20, 2015: "Delaware & Hudson locomotive, I can tell by distinctive D&H lines, not sure of location."

2. Two photographs of a steam locomotive that were in the former Hotel Lackawanna, Belmont Street, Carbondale, PA.; both photos now in the collection of the Carbondale D&H Transportation Museum.





3. Steven Brown posted these three D&H J-Class photos on *Facebook* on August 18, 2015.





#### 4. Draftsmen at Dickson Manufacturing Company

Many of the D&H engines were made at the Dickson Manufacturing Company in Scranton. Here is a photo of the draftsmen at the company that was taken about 1900 in front of the office building of the Cliff Works, Cliff Street, Scranton, Locomotive Plant of the Dickson Manufacturing Company. The chief draftsman, Pop Reese is on the far right. Photo in the collection of the Carbondale D&H Transportation Museum.



#### 5. Fuel for steam locomotives: Several possibilities:

1. 70% buckwheat anthracite, 30% bituminous coal
2. straight pea coal
3. anthracite lump coal
4. culm



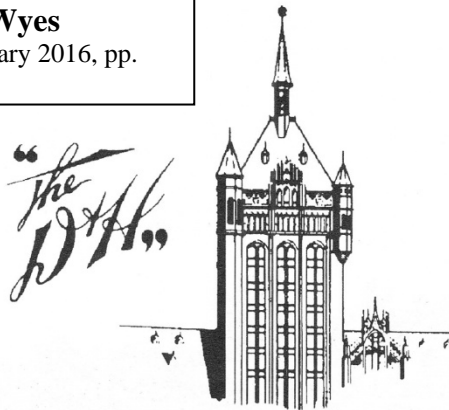
## Roundhouses and Turntables

In 1929 there were a total of 26 engine houses/roundhouses (with a capacity from one to fifty-two locomotives) on the D&H, and twenty-nine turntables (thirteen operated electrically, three by compressed air, and thirteen by hand) in the daily operations of the D&H. Those statistics we have learned from *The Delaware and Hudson Company BOARD of MANAGERS INSPECTION of LINES : : JUNE 7, 8, and 9, 1929*. Here are the two exact references:

1. "There is a total of twenty-six engine houses [roundhouses] on the line, ranging in capacity from one to fifty-two locomotive stalls." (*The Delaware and Hudson Company BOARD of MANAGERS INSPECTION of LINES : : JUNE 7, 8, and 9, 1929*, p. 14)
2. "There are in all twenty-nine turn tables used in daily operations, thirteen of which are operated electrically, three by compressed air, and thirteen by hand. (*The Delaware and Hudson Company BOARD of MANAGERS INSPECTION of LINES : : JUNE 7, 8, and 9, 1929*, p. 16)

In the pages that follow we will take a close look at the roundhouses and turntables at Binghamton, Carbondale, Colonie, Green Island, Green Ridge, Honesdale, Mill Creek (a wye and not a turntable), Oneonta, and Wilkes-Barre. (For information about and photographs of the turntable at Lanesboro, see Volume XI in this series.)

As we begin our look at roundhouses and turntables on the D&H, it is well to read the highly informative article by Howard Hontz titled "A brief history of The D&H's tables and wyes" that was published in the February 2016 issue of the *Bridge Line Historical Society Bulletin*, pp. 10-11. Here is that article:



## From the Top by Howard Hontz

### A brief history of The D&H's tables and wyes

As far back as the beginning of railroading, there has always been a need to turn locomotives, cars or wagons, as they were first called, and even passenger cars. There were only two ways found to do this.

One was a track constructed in the shape of a long "Y" (hence, the term wye), which required a switch at the throat of the "Y". The second way was a turntable, which was also known as a "wheelhouse".

Railroads needed a way to turn steam engines for return trips, as most were not designed for running in reverse for extended periods of time. Also, they were often speed-restricted in reverse. However, most diesel engines can be operated either way, with either the "front" or "rear" first, without restriction. Also, when diesels operated as multiple units with the end units pointed in opposite directions, there is no problem, as the units can be operated from the leading unit.

#### Early turnplates or turntables

The early tracks were called "wagonways" and the early "turnplates" were made of wood and installed level with the track or wagonway. They were also built to a diameter to hold one wagon. The wagon would be run onto the turnplate from one track, and the turnplate, which sat on a center pivot, could be rotated to another track or wagonway, or turned 180

degrees if desired to reverse the direction completely.

However because the construction was wood, capacity was limited until iron and later steel replaced stone and wood. Eventually, as engines replaced horses as the preferred motive power, turntables were built with a steel or iron bridge over a circular pit, with the bridge balanced on a central pivot.

#### Turntables and wyes on the D&H

Turntables were provided at most D&H terminals from Wilkes-Barre, Pa. and Binghamton, NY to Rouses Point, and at outlying terminals such as North Creek, NY. However,

there was still a need to turn engines at other outlying locations along the line. This was needed where pushers had to be turned to push a train in the opposite direction from which it originated, and where no turntable existed.

Engines arriving at engine terminals could be turned on the turntable, but at these outlying locations like Ararat or Lanesboro, Pa. or at Grover's, near Afton, N.Y., a "Y" was needed.

#### Operations on the Susquehanna Subdivision

A tonnage train leaving Binghamton faced a grade for 15 miles to climb to the Belden Hill tunnel, which is at the top of the grade. The train would have, say, a 1500-series Challenger class "J" on the head end, and the same for a pusher, with a 5000-ton train. The pusher would push to the tunnel, cut off, and follow the train downgrade (north) to the wye at Grover's.

At Grover's, the pusher would pass the north switch of the wye, back into the wye's north leg past the switch at the wye throat, and head out on the south leg. This would head the engine south, where it would wait for a Binghamton-bound southbound train. Once the southbound arrived and stopped south of the wye, the pusher would come out, couple to the rear, push the train about 12 miles to the top of the Belden grade, and follow the train to Binghamton. If it was needed for another northbound out of Binghamton, the pusher would be turned on the turntable at the Binghamton engine terminal. However, if it was needed for another southbound, it

There was a turntable at Lanesboro. The Cascade Wye was just a short distance north of Lanesboro. See Volume XI in this series.

would have to back north to Grover's again to wait for the next southbound.

Cabooses used from and to Binghamton were built to be pushed on, and had strong underframes.

Pushers were often needed for southbound trains facing the Esperance, Howes Cave and Richmondville grades, for about 44 miles from Schenectady. These pushers usually originated usually at Mohawk Yard, but the engines mostly came from Mechanicville. The pushers would shove from Mohawk to the top of Richmondville and then return to Mechanicville, making a reverse move, running backward, as there was no wye in that distance to turn the engine. Usually the pusher would make only one push due to the time and distance involved. Sometimes these trains would be double-headed, with two engines on the head end to avoid a pusher being required.

#### Operations on the Pennsylvania Sub

As the Pennsylvania Subdivision originated an abundance of coal, and many solid coal trains, in addition to the freight from the three connections at Wilkes-Barre and Hudson, most trains required pushers. In those years, the cabooses were placed behind the pusher due to the limited strength of the caboose frame, and to avoid damaging the caboose or worse. Pushers were used when needed out of Wilkes-Barre to assist both over the short grade (7 miles) to Yatesville, and the long grade, 21 miles, from Carbondale to Ararat.

At Ararat there was a wye, so the train would stop after passing the switch to the wye and the pusher would make the move, either dropping the caboose by the train with the pusher in the siding, or by taking the pusher engine up the main behind the train, and the caboose in the siding, then picking the caboose up and placing it on the rear of the train. Then the train could make the air test and proceed.

However, if the pusher was needed to push a southbound train coming south from Oneonta, it would instead follow the train down the Ararat grade to the wye at Cascade (Lanesboro), turn on the wye there, and await the arrival of the southbound. Now, a word of warning to the crew on the pusher at Cascade: there are rattle snakes around the tail of the Cascade wye, so watch yourself if you get off the engine for any reason.

#### *From the Top from page 10 Still out there*

*There are still some turntables and wyes in use in this country, and other countries as well. There is still a former D&H turntable in use at North Creek by the S&NCRR. However, most have been retired, due to not being needed because of the flexibility provided by diesel power.*

The size of the roundhouse in any given location reflected the motive power needs of that division, which reflected the traffic on that division. A contributing factor to be considered in determining the size of a roundhouse was the need for pusher locomotives. Given the grade over Ararat Summit on the Pennsylvania Division and the grade over Richmondville Hill on the Susquehanna Division, there was a great need for pusher locomotives in those two locations.



## Binghamton Roundhouse and Turntable

From the biographical portrait of Patrick J. Connors ("Conductor No. 1 Retires After 55 Years On Susquehanna Division," *The Delaware and Hudson Railroad Bulletin*, July 1, 1935, pp. 99-100) we learn several very interesting facts about the Binghamton yard and roundhouse in 1880. Therein, we read:

"Binghamton yard consisted of a very few tracks in the vicinity of Liberty Street in 1880 when Mr. Connors was hired as brakeman, at \$40 per month, by Mike Fitzgerald, conductor of a work train. The roundhouse, with stalls for perhaps a dozen of the small engines then used, stood approximately where the yard office is today, the latter being housed in an old shack between the roundhouse and the tracks." (p. 99)

From the biographical portrait of Bert J. Loomis ("Engineer's Biggest Thrill") that was published in the January 15, 1932 issue (pp. 19-20, 30) of *The Delaware and Hudson Railroad Bulletin*, we learn additional interesting facts about the Binghamton D&H yard and roundhouse when Bert Loomis began working for the D&H as a fireman in January 1891. At that time, Charles O. Vedder was Foreman and Patrick Shea, later Assistant Superintendent, was Yardmaster. In that biographical portrait we read:

"The Delaware and Hudson layout at Binghamton was then considerably different from the present [1932] plan. The roundhouse was at Liberty Street—part of it is still used as the yard office. In addition to the twelve locomotive stalls there was a blacksmith shop, carpenter shop, oil room, supply shed for storing lumber and tools, and the foreman's office. The freight house was located about half way between Chenango Street and the roundhouse. . . . When Mr. Loomis first came to Binghamton the train crews made up their own trains, averaging 22 cars each. All the lead engines were Moguls; Consolidation type engines 179, 180, and 181 were in pusher service. When a crew began to make up its train the conductor spotted all the light loads and did his best to include them in his train, provided, of course, a yardmaster wasn't looking. Those cars averaged about 40 tons each; when 80-ton cars appeared the crews were dismayed, although heavier motive power removed that source of concern to some extent. . . ."

Many additional facts about the D&H are presented in the biographical portrait of Bert J. Loomis, who was promoted to the rank of engineman in 1903.

"After two years [in 1905] on the extra board he was assigned a regular engine, 'the 868.' He personally ran it out of the Dickson Locomotive Works at Scranton. . . . One fast freight run he made with the Wilkes-Barre-Oneonta 'Berry Train' [emphasis added] stands today as a speed

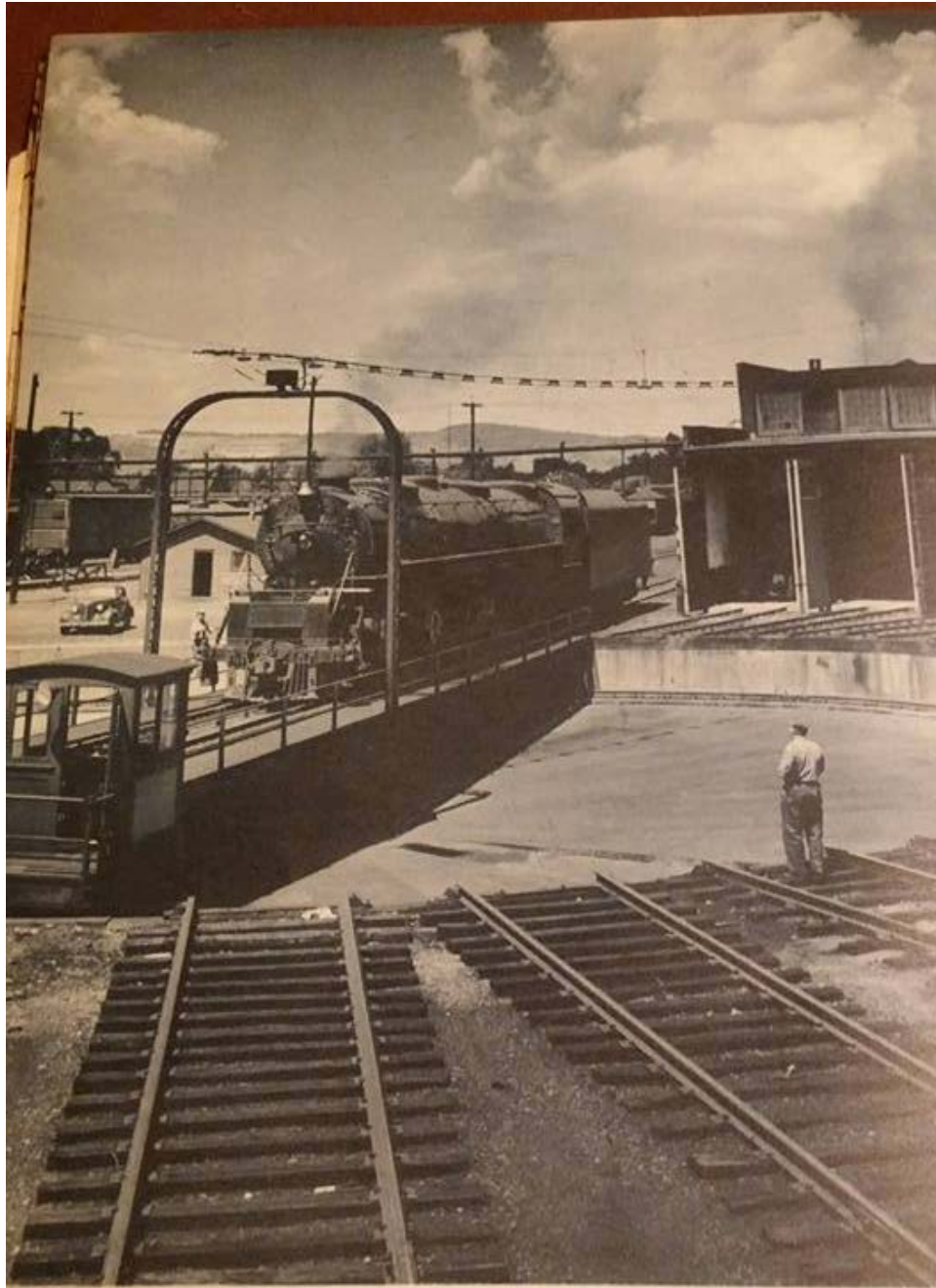
record on the Pennsylvania Division. One morning coming north he received orders to use the southward main from Ararat to Starucca. Passing Thompson the operator handed him an order to 'hurry up'—there were southbound trains waiting for him. Six minutes later he cleared the southward main at Starucca—he had covered those 3.8 miles in that short time from a dead stop at Thompson. / Years ago the Susquehanna Division was made up of a series of sags and humps. If a train broke in two in such a territory the rear end was apt to crash into the front portion in a sag. For this reason, a 'bell cord' was run from a large reel in the caboose to a gong in the cab. When that gong rang the engineman knew that the train had parted. He immediately opened his throttle to 'run away' from the rear end. When he considered it safe to do so he stopped and waited for the head trainman to locate the stray section of his train." Biographical portrait of Bert J. Loomis: "Engineer's Biggest Thrill," *The Delaware and Hudson Railroad Bulletin*, January 15, 1932, pp. 19-20, 30.

We learn more about the Wilkes-Barre-Oneonta Berry Train, a fast freight that was run by Bert J. Loomis in 1905, in the biographical portrait of Seth V. Colvin ("They Had No Caboose") that was published in the October 1, 1932 issue (pp. 259-260) of *The Delaware and Hudson Railroad Bulletin*.

From that portrait we learn that Colvin took charge, in 1906 of the Wilkes-Barre-Oneonta Berry Train and that he had that run until 1909. That train, "fast freight train 69," Mr. Colvin reported, "left Wilkes-Barre for Oneonta at 6 P. M. with all the perishable freight delivered to our line by its three connections at Wilkes-Barre during the day. They usually had 30 cars leaving Wilkes-Barre; they picked up 20 more at Scranton and Carbondale, and then 'headed for Oneonta as fast as they could turn a wheel.' [emphasis added] Mr. Colvin held this run until 1909 when, following an injury in a derailment at Ararat, he was transferred to a tower at Miners Mills, Pa., where he continued until he was retired February 1, 1926." (p. 260).

In 1911, a 10-stall roundhouse and a new terminal were opened in Binghamton. The turntable, which was powered by electricity, was 125 feet long. It was the only D&H turntable that could turn the D&H Challengers. Those at Carbondale, Oneonta, and Colonie were 2 ½ feet too short for the Challengers. If a Challenger had to enter a roundhouse, the turntable was used as a bridge just to gain access to a roundhouse stall. To turn a Challenger at Carbondale, Oneonta, or Colonie a wye track was used.

On June 2, 2016, Raymond Storey posted on the Delaware and Hudson Railroad *Facebook* page the following photograph of the turntable and roundhouse at Binghamton:



"End of the journey, start of another . . ." This turntable, a mighty merry-go-round for giant engines, is at the Delaware & Hudson yards in Binghamton.



Comments on that photo on the *Facebook* page:

**Geoff Ross:** "First photo I have seen of a J95 on a turntable! Very few turntables were large enough for the big 4 6 6 4's. Some D&H trivia via Official List #65 my friend Matt Forsyth allowed me to copy. As of 1/1/1950 the turntable at Binghamton was the longest at 125 ft. The TT's at Colonie, Oneonta and Carbondale were 105 ft. These were theoretically capable of turning a J95. The other TT's on the line were too small!!!"

**Greg Flynn:** "The Bevier Street table would actually fit two 628's, but the steps and pilots hung over the ends a bit. Thanks for posting this. Steam photos of the D&H between Nineveh and Binghamton are rare, as are photos of the Binghamton shop. That shot is looking railroad north, straight through Bevier Street yard and the start of the mainline. I spent most of my teenage years in and around that building before and after it burnt down."

A program of extensions and improvements was instituted in the D&H yard at Binghamton in 1925 and completed in 1932. About those extensions and improvements, we read the following in *The Delaware and Hudson Company INSPECTION of LINES :: JUNE 7, 8, 9, 1929*, p. 22:

The volume of traffic through Binghamton yard has been steadily increasing. In 1925 a program of extensions and improvements was instituted which it is expected will be completed during the year 1932. In the main yard six tracks have been extended and three new tracks constructed, increasing the capacity by one hundred and fifty cars. Other tracks have been rearranged; close clearances, curvature and sharp angle frogs have been eliminated. New tracks have been provided for the accommodation of the wreck train and for the assembling of cripple cars. A concrete teamway, paralleling the team track, and an unloading platform, so constructed that freight can be unloaded from either end or side of a car, have been built. An obsolete yard office and ice house have been abandoned and replaced by modern structures.

A new freight car repair yard, capacity 131 cars, and a passenger car repair yard, capacity 28 cars, have been provided together with a lorry track, depressed wheel track and numerous other facilities for car repair work.

The total expenditure to date on the Binghamton yard improvements amounts to \$240,000.

In 1931, the street-side of the Binghamton roundhouse was "brightened up and beautified" by the D&H. The following account ("Binghamton Roundhouse Dresses Up") of that initiative was published in the December 1, 1931 issue of *The Delaware and Hudson Company Bulletin*, p. 356:

## Binghamton Roundhouse Dresses Up



*Whitened cobblestones which prevent erosion of bank on street side of engine house give a well-kept appearance.*

THE unique solution of two perplexing problems, which formerly confronted the roundhouse force at Binghamton, worked out by the employees in their spare time during the past summer, is shown in the two accompanying illustrations.

As in most locomotive plants, it was difficult to brighten up and beautify a roundhouse site which is periodically showered with fine bituminous coal cinders from locomotive smokestacks. More difficult of solution, however, was the problem of anchoring the cinder bank on the Broad Avenue side of the plant, which was washed out by every heavy rain.

Two birds were figuratively killed with one stone when someone happily hit upon the plan of cover-



ing the entire bank with whitewashed cobblestones. The stones, averaging approximately four inches in diameter, were hauled to the plant, where they were closely fitted together by the employees in their spare moments during the summer. They were then painted, giving the roundhouse a bright white setting.

Proper drainage was further insured by forming gutters of cobblestones leading to manholes and street sewers.

There are two photographs of the interior of the Binghamton Roundhouse in the April 2015 issue of the *Bridge Line Historical Society Bulletin*. Here is the photograph + caption on page 5 of that *BLHS Bulletin*:



"The inside of the roundhouse in Binghamton shows its dilapidated condition in 1988. Photo by Stan Trzoniec."



Here is the photograph + caption on page 9 of that *BLHS Bulletin*:



"Another photo . . . of the inside of the roundhouse in Binghamton in 1988 shows the reason it didn't just collapse: the massive concrete beams. Photo by Stan Trzoniec."

Given below is a remarkable photograph, with caption, that was posted on the Delaware and Hudson *Facebook* page on November 22, 2015; photo by Richard J. Allen, Sr.



“D&H engine terminal at Binghamton, N.Y. from the cab of an Alco C-628. Photo taken in Sept. 1964 by Richard J. Allen, Sr.”

Shown on the following page is a photograph of the caboose track in the Bevier Street yard in 1971 that was posted on the Delaware and Hudson *Facebook* page on December 23, 2015 by “Dale V. Rockwell The Fallen Flags”.



“Caboose track Bevier Street Yard in 1971. In Binghamton, New York. Dale V Rockwell The Fallen Flags”



The following Binghamton-based discussion of Yard Limits, Humpers / Flat Jobs took place on the Delaware and Hudson Railroad *Facebook* page on May 17, 2015. We record it here, for the record.

**Bradley Peterson, Jr.:** “D&H never used yard limits in the NORAC or GCOR years. SU was for Susquehanna, P for Pennsylvania, SC for Saratoga/Champlain subdivision locals. Until See Pee changed things and went to computer symbols, yard jobs just went in numerical order in the yard (Saratoga had Yard 1 – Yard 5. Binghamton had Yard 1 – Yard 9. Ft Ed was just ‘yard job’) when I started in ’99. Now they’re all locals...no designated yard switchers to they can run the crews everywhere and get away with no penalties for taking them out of the yard. Some jobs do still stay in the yard only but it’s See Pee’s insurance policy!”

**Sam Botts:** “Yard Limits are a term directly out of the CFR (code of federal regulations). Yard Limits can only be in effect on a main track. Where yard limits are used, passenger trains may operate at normal speed, all other types of track movements are made at restricted speed. At Binghamton, under NORAC (North East Operating Rules Advisory Committee), Rule 97 was in effect from Binghamton Container to CP-BD on #2 Running Track, Powers Road to CP-BD on #1 Running Track, QD to EMT (End of Main Track) on the Buffalo Running Track and from CP-BD to EMT (End of Main Track) on the Binghamton Running Track. All other tracks were governed by Rule 98. Movements on tracks designated by Rule 97 are under the direction of an employee designated in the ETT (employee timetable). In Binghamton, they were controlled by the Binghamton Yardmaster (I worked as yardmaster at Binghamton for CP/D&H from 1998 through 2004.”

**Michael Eggleston:** “The humper was usually the engine that worked the north end yard job, pulling cars up the natural grade at Bevier Street and then working with the yard crew (conductor and 2 or 3 brakemen to classify the cars in Binghamton by dropping the cars, with a brakeman, into the various yard tracks. The humper was never restricted to the hill, and could be used on the south end of the yard, going to Liberty Street yard or the old DL&W interchange (Front, Middle & Back) tracks alongside Stanford Seed to pull or place interchange cars for the EL. The ‘flat job’ was usually called when there was a lot of industrial work (Kroehlers, Brick Yard, Binghamton Paper) or switching the repair track after the FRA had visited and crippled half the cars in the yard, or when the yard was jammed with traffic and cars were switched out on the south end of Bevier St. In later years at Bevier St., the ‘flat job’ was a rarity, but was called that to avoid radio confusion. I think that the SU designation was more to identify the crews with the ‘Susquehanna Division’, just like the ‘P’ jobs were usually ‘Penn Division’ locals. Changing the yard jobs to locals was also part of the cutting down the number of trainmen on the yard to a conductor and two brakemen. Later one brakeman, later only engineer and conductor. Cost-cutting on Guilford days was a religion for Mellon, Fink and the rest of the Boys from Boston.”

We conclude this look at the Binghamton D&H yard, roundhouse, and turntable with a post card view that is titled “Erie Railroad Yards, Binghamton, N.Y.” A note associated with this post card reads: “To the left is the former Erie Freight/Passenger Station and their Liberty St. Yard.”



*Erie Railroad Yards, Binghamton, N.Y.*

## Carbondale Roundhouses and Turntables

There were four different roundhouses in the D&H Carbondale yard which, for easy reference, we will call: 1871-1872 Roundhouse, 1884 Roundhouse, 1890s Roundhouse, and 1910-1911 Roundhouse.

### 1871-1872 D&H Roundhouse

In September 1870, it was announced (1) that D&H was having “extensive Coal Pockets” built on the Flats, and (2) that the Erie Railroad, too, was also preparing to erect a roundhouse on the Flats. In the September 3, 1870 issue of the *Carbondale Advance*, we read:

**“The New Improvements.** / We learn that the D. & H. C. Co. have made arrangements with Messrs. Johnson & Cooper, contractors, for the erection of extensive Coal Pockets, upon their flat, near the terminus of the Jefferson railroad. This looks like business, and will be a decided advantage to the town. / It is also stated that two Round Houses, one for each company, are about to be erected there.” (*Carbondale Advance*, September 3, 1870, p. 3)

In the August 12, 1871 issue of the *Carbondale Advance*, it was announced that Superintendent Manville was having a ‘very substantial brick ‘Round House’ erected on the Flats in Carbondale:

**“The New Round House.** / R. Manville, Esq., R. R. Supt., is having a very substantial brick ‘Round House’ erected for the Del. & Hud. C. Co., on the Flats.” (*Carbondale Advance*, August 12, 1871, p. 3)

From the *1890s Summary*, we learn that eight stalls in this D&H roundhouse were built in 1871 and that sixteen additional stalls were added in 1872:

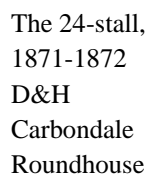
“Eight stalls of the present upper roundhouse had been built in 1871, and completed to twenty-four stalls one year later.”

In the *Carbondale Leader* of November 9, 1872, it was announced that this 1870-1871 Carbondale roundhouse was “a fine brick round-house”:

“The D. & H. C. Co. has erected a fine brick round-house for the accommodation of twenty-four engines at this place.” (*Carbondale Leader*, November 9, 1872, p. 3)



*D. G. Beers Luzerne County/Carbondale map, 1873, showing the location of the 1871-1872 Carbondale Roundhouse.*



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"JACOB EITEL was born in 1831, in Germany, where he married Eouisa Romelmeyer; came to Carbondale in 1871; engaged in the employ of the Delaware and Hudson Canal Company, and in 1874 was appointed foreman of the round-house. He served in the late war, in the New Jersey infantry, from 1861 to July, 1864."

From the biographical portrait of Anton Roemmelmeyer ("Carbondale Gazed in Wonder When Electric Lights First Blazed in the D. & H. Locomotive Shop") that was published in *The Delaware and Hudson Railroad Corporation Bulletin* of February 1, 1934 (pp. 19-20, 28), we learn that Anton Roemmelmeyer, who worked for the D&H for 51 years, was born in Carbondale, January 29, 1863, and that his stepfather was Jacob Eitel, Delaware and Hudson Roundhouse foreman and engine dispatcher.

This 1871-1872 roundhouse is where Anton Roemmelmeyer reported in 1881 for his first day of work for the D&H, having been hired by Master Mechanic Samuel H. Dotterer as a machinist's apprentice.

"When he reported for his first day's work, in the old roundhouse located about 600 feet north of the present site, Anton was put under the tutelage of W. R Johnson, a machinist who later became master mechanic of the division." (p. 20)

In 1876, the D&H locomotive repair shop operations were moved from the roundhouse at Green Ridge to a locomotive shop that was erected in that year near the 1871-1872 Carbondale roundhouse. In the *1890s Summary*, we read:

"In 1867, a roundhouse of twelve stalls, together with an iron turntable, was built at Green Ridge. Two of these stalls were fitted up for a locomotive repair shop, and the company's engines were repaired there until 1876, when the increasing number of locomotives made it imperative that a larger shop, with improved machinery, be erected, and a locomotive shop (which has since been considerably enlarged) was built near the Carbondale upper round house in that year."

It was in this locomotive shop, we learn from the biographical portrait of Anton Roemmelmeyer referenced above, that the first electric lights to glow in the city of Carbondale were located. In Roemmelmeyer's biographical portrait, we read:

"The first electric lights to glow in the city of Carbondale, Pa., illuminated the locomotive shop of The Delaware and Hudson, according to Anton Roemmelmeyer, retired machinist. Prior to their installation, night work on the engines had to be done in the feeble light of oil lamps; when, therefore, arc lamps were in the experimental stage of their development, a dynamo and six arc

lights were purchased and placed in the locomotive shop. When they were first turned on the men blew out all the oil lamps and were gratified to find that the electric lights produced many times as much illumination as the former. For some time thereafter crowds gathered around the roundhouse each evening to witness this 'modern miracle.'

Anton Roemmelmeyer, it should be noted, was an important figure in the history of music in the City of Carbondale. In his biographical portrait referenced above, we read:

"One of Mr. Roemmelmeyer's favorite avocations was music, and for many years, beginning in 1878, he played both the clarinet and cornet in the Mozart Band of Carbondale, all the members of which were 'Dutchmen.'\* These musicians were constantly employed at Lake Ladore when excursions over the Gravity Railroad drew thousands of people to that picnickers' paradise each week from all parts of the east." (pp.20, 28)

\* "Dutchmen" here means "German"; "Deutsch" was then—and still is--misunderstood by many to mean "Dutch" and not "German"

It was in the locomotive shop near the upper Carbondale roundhouse that Hezekiah Fisher worked when he removed to Carbondale from Scranton:

"Hezekiah Fisher, aged 67 years, died on Monday evening, at his home on Belmont street, of paralysis. Deceased was formerly a resident of Scranton, and removed to this city about nine years ago. He was a blacksmith by trade, and until about a year ago worked in the D. & H. Locomotive shops. His wife, and two sons, Geo. F. Fisher, of Fell, and Wm. H. Fisher, of this city, and a daughter, wife of ex-Conductor E. M. Gilbert, of South Abington, survive him. Mr. Fisher is said to have been one of the oldest Masons in this section, having been a member of Union Lodge, No. 291, F. & A. M., of Scranton, since its organization. Carbondale Lodge, No. 249, attended the funeral, which took place at 2 o'clock yesterday afternoon, and buried him with Masonic honors. The interment took place in Maplewood cemetery." (*The Journal*, October 21, 1886, p. 3)

In the *Carbondale Advance* of May 10, 1879 (p. 3) we read: "The D. & H. C. Co. are driving the new work upon the 'Round House.' The specific nature of the "new work" has not yet been learned.

In the *Carbondale Leader* of June 10, 1881 (p. 3) we read: "Two new water tanks have just been put in the vicinity of the Round House by the D. & H. C. Co. The increase in the railroad business made it necessary to replace the old ones with others of larger capacity." The 1871-1872 roundhouse was the only roundhouse in Carbondale at the time. The two new water tanks referred to in this announcement must have been put in the vicinity of the 1871-1872 roundhouse.



## 1884 D&H Roundhouse

The 1871-1872 roundhouse, from the perspective of 1884, was sometimes called “the upper roundhouse.” In 1884 a second roundhouse was built in the Carbondale yard. This new roundhouse was sometimes referred to by contemporaries as “the lower roundhouse.” In the *1890s Summary*, we read: “The lower [Carbondale] roundhouse was built in 1884.” That date is confirmed in *Century of Progress*, wherein we read: “Among the improvements of the year [1884] was the erection of a new sixteen-stall locomotive roundhouse at Carbondale.”

The engine stalls in this new sixteen-stall roundhouse were under construction in April 1884:

“Engine stalls are being built in the new round house.” (*Carbondale Advance*, April 12, 1884, p. 3)

In the *Carbondale Leader* of November 15, 1887 (p. 4) we read: “The turntable pit at the old round house is now 56 feet in diameter and will be of sufficient length for any purpose. The new table is expected this week.” The roundhouse in question must surely be the 1884 roundhouse. The announcement in the *Carbondale Leader* is not clear in that regard.

On April 29, 1888, D&H Locomotive No. 64 exploded at the [1884] roundhouse. Here is the announcement of that explosion that was published in *The Journal* on May 3, 1888:

“D. & H. Locomotive No. 64 exploded at the round house on Sunday night, blowing out the front end of the boiler. Fortunately no one was hurt.” *The Journal*, May 3, 1888, p. 3.

## Erie Railroad Roundhouse Note:

When the D&H 1871-1872 roundhouse was built, the Erie also built a roundhouse in the D&H Carbondale yard. This we know from the following announcement in the *Carbondale Advance* of September 3, 1870:

“**The New Improvements.** / We learn that the D. & H. C. Co. have made arrangements with Messrs. Johnson & Cooper, contractors, for the erection of extensive Coal Pockets, upon their flat, near the terminus of the Jefferson railroad. This looks like business, and will be a decided advantage to the town. / It is also stated that two Round Houses, one for each company [the D&H and the Erie], are about to be erected there.” (*Carbondale Advance*, September 3, 1870, p. 3)

That 1871-1872 Erie roundhouse is described as a “frame shed” that burned in about 1885 in the announcement in the *Carbondale Leader* of December 11, 1889, in which it was announced that the Erie was about to built a new roundhouse in the Carbondale yard. Here is that 1889 announcement:

**“TO BUILD A NEW ROUNDHOUSE. / The Erie Will Erect a Brick Barn for Their Iron Horses.** / Ever since the destruction of the frame shed that sheltered Erie locomotives at this end of the branch the half dozen pushers and pullers have not been housed. The fire that destroyed the building took place about four years ago and the management evidently concluded that it was not worth while rebuilding the shed. / Six months ago it was rumored that the Erie had decided to erect a full grown round house with ample accommodations for their engines that remained over night in this city. Following this rumor we learned that the project had fallen through and the pushers were doomed to spend another winter on the side tracks. / Yesterday Master Builder Saxton came over the branch and brought the information that a substantial brick building would be erected at once on the site of the old shed. One section of the circle was to be constructed immediately which would accommodate eight locomotives. / This will be good news for engineers and firemen and the men who are employed in the repair shops in the Erie yard. It will be good news to the people, for the erection of such a building indicates that the Erie has come to stay.” (*Carbondale Leader*, December 11, 1889. p. 4)

Shown below, in a copy made from a newspaper reproduction of the original, is the Erie Roundhouse in Carbondale in 1875. This is the Erie roundhouse (a frame shed that sheltered a half-dozen Erie pushers and pullers) that was destroyed by fire around 1885. The caption on the photo given below, when published in the *Nostalgia* section of the *Carbondale News* of November 21, 1978, reads as follows:

“ERIE ROUNDHOUSE in Carbondale is seen here in the year 1875. Several gentlemen pose in front of a pair of wood burners which were the power for the Jefferson Division or branch from 1870 when the branch was built until about 1880 when the Erie got an engine known as the Modock which was a little larger with eight driving wheels. George M. Norris was general foreman at the car shops and roundhouse in Carbondale in 1875. (Photo courtesy of C. O. Fitch)” (newspaper clipping from the *Carbondale News*, dated November 21, 1978)

Here, then, is a copy of a newspaper reproduction of an 1875 photograph of the Erie roundhouse that was built in the Carbondale yard in 1871-1872. This is the only known photograph of this 1871-1872 Erie roundhouse. In this photo, several gentlemen pose in front of a pair of Erie woodburners that were used on the Jefferson Branch of the Erie from Carbondale to Lanesboro:

*1871-1872 Erie Roundhouse in Carbondale*

While we're focusing for the moment on the Erie, here is a very nice photograph of Erie Locomotive No. 4222 at B S Tower, April 10, 1945. Photograph in the archives of the Carbondale D&H Transportation Museum.

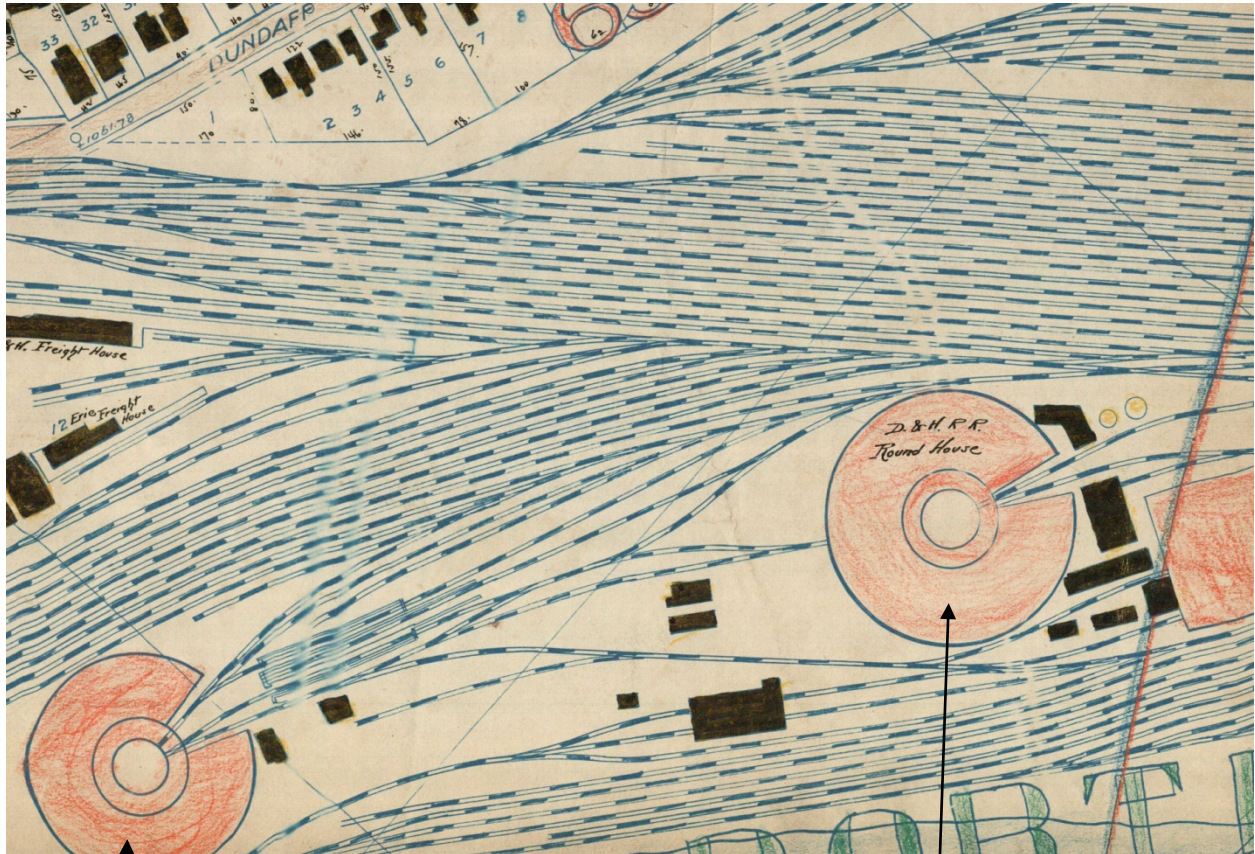




## 1890s D&H Roundhouse

This D&H roundhouse was built in the 1890s south of the 1884 roundhouse.

On the detail given below of the 1909 *Map of the City of Carbondale Lackawanna County, Pennsylvania, 1909, From Actual Surveys By and Under the Direction of George William Tappan*, Scranton, PA, October 18, 1909, both the 1890s D&H Roundhouse and the 1884 D&H Roundhouse are shown:



1890s D&H  
Carbondale  
Roundhouse

1884 D&H  
Carbondale  
Roundhouse

Here is a photograph of the D&H 1890s Carbondale Roundhouse. A print of this photograph is in the collection of the Carbondale D&H Transportation Museum.

It was in this 1890s roundhouse that Fireman John Kelly was accidentally killed in June 1891. Here is the account of that tragic accident that was published in the *Carbondale Leader* of June 10, 1891, p. 4:

**“RAILROAD NOTES. / Young Kelly’s Death Throws a Gloom Over the Division. /** The tragic and untimely death of Fireman John Kelly has caused a mantle of gloom to over spread this entire division. There is not a train hand from Nineveh to Wilkes-Barre who is not visibly affected and even the toddling urchins who toil in the round house pit are seen huddled in groups talking in grave tones of the fate which befell the man whom they all admired. The deceased entered the service of the company as engine hostler at the round house in this city about eight years ago and after the lapse of three years was through his natural mechanical ability advanced to the position of fireman, and had he lived he would in a few months have been called upon to

accept the most responsible position that a railroad superintendent can offer—that of engineer. The report which has been circulated by the Scranton paper that the unfortunate man made two or three attempts to make the coupling and was then crushed between the bumpers is untrue. On the contrary he merely dropped the pin for the trainman who had put the link into the drawhead and was in the act of stepping out from between the cars when without an instant's warning there came a bump from the rear which threw him to the rail and in the twinkling of an eye the wheels were upon him, two of which passed over the upper portion of his body. / The above will probably convey to those who are not accustomed to railroading an idea of the frail and uncertain hold that a railroad man has on life. All that's required is just one misstep and somebody's darling is robed in the cold, clammy armor of death. . .” (*Carbondale Leader*, June 10, 1891, p. 4)

It was also in this 1890s roundhouse that Charles McIntre was severely injured in late January 1899. Here is the account of that accident from the *Carbondale Leader*:

**“ACCIDENTS. / Two Men Injured While at Work on the Railroad—A Child Injured. /** Charles McIntre an employe at the Delaware and Hudson round house was severely injured Tuesday evening while at his work about one of the engines. He was engaged in dumping the cinders from an engine when a lever flew and struck him on the head inflicting a bad scalp wound and several bad bruises. He was taken to the office of Dr. D. L. Bailey where his injuries received attention. It will be a considerable period before he will be able to resume his duties again. . . .” (*Carbondale Leader*, January 26, 1899, p. 5)

Also in the 1890s roundhouse, on October 9, 1899, George Seidler lost control of engine No. 13, the engine and tender both going into the turntable pit. Here is the account of that accident from the *Carbondale Leader* of October 10, 1899:

**“LOCOMOTIVE ON ITS SIDE. / Green Hostler Runs a Monster Engine Into a Turn-Table Pit at the Round House. /** Yesterday seems to have been a day of misfortunes on the Delaware & Hudson railroad, for in the afternoon another unfortunate accident, equal to the one that happened in the morning at Dundaff street crossing, occurred at the lower round house. / George Seidler a hostler recently employed by the company and unused to handling locomotives in an attempt to move engine No. 13 lost his head when the machine responded to the throttle lever and jumped, allowing it to turn into the turntable pit where it landed tender and all on its side. / The accident occurred about three o'clock in the afternoon and workmen were immediately set at work to get the monstrous piece of mechanism out. They worked the remainder of the day and all last night and are still engaged. The most of the work is being done under the personal supervision of master mechanic W. R. Johnson. / The tender was raised last evening by the aid of a block and tackle. A derrick is generally used for this purpose but could not be placed at good advantage in the round house. The other part of the engine is much heavier



and is being blocked up after first being righted or set on rails. When it is level with the top of the pit it will be run off on the rails. / The amount of labor entailed is enormous and so far the job had kept a large gang of men at work. If the accident had occurred in the morning the results would be still worse as a number of the engines used on the road would have been shut in and tied up a number of trains for the period it required to get the engine on the track again.” (*Carbondale Leader*, October 10, 1899, p. 5)

### **1910-1911 Carbondale D&H Roundhouse:**

The 1910-1911 D&H Carbondale Roundhouse was built on the site that was formerly occupied by the 1884 D&H Carbondale Roundhouse.

Here is an excellent article, titled “Carbondale Roundhouse, D. & H. Company,” that was published in *Railway Master Mechanic*, January 1912, pp. 14-16, about the 1910-1911 D&H Carbondale Roundhouse. Special thanks to John V. Buberniak for locating this article and for his help in preparing it for inclusion here.

### **“Carbondale [1910-1911] Roundhouse, D. & H. Company**

The Delaware and Hudson Company is just finishing the construction of a round house at Carbondale, Pa., for the housing of its Mallet locomotives, and has made a number of other improvements greatly enlarging the facilities and bettering the conditions at this point. Carbondale, in the heart of the anthracite coal fields, is the division headquarters of the Pennsylvania division and its principal yard point, from which an extremely heavy tonnage goes out daily both to the north and to the southward. The new Mallets are employed to bring in shipments from the lower portions of the division, but especially are they effective in the pusher service to the summit of Ararat, north of Carbondale.

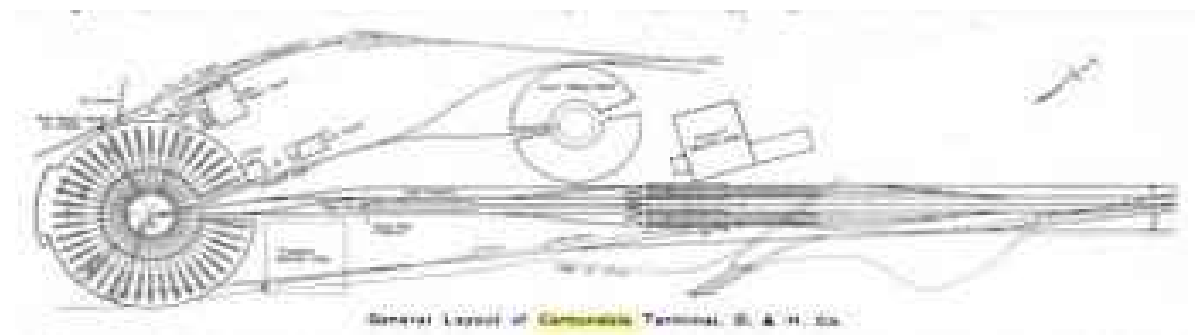
Until the recent improvements, the shop facilities at Carbondale consisted of a machine shop, car repair shops, coaling station, etc., and two round houses, one built about 1884, and the other a larger one of more recent construction [the 1890s Roundhouse], but neither of sufficient length of stall or turntable capacity to permit their being used for housing the new power equipment secured to the increasing amount of heavy traffic. This class of locomotive is amply provided for, however, in the new roundhouse located south of the present machine shops between the local freight yard and the Lackawanna river, and over the site of the older of the two original structures, the south roundhouse [the 1884 Roundhouse], which was torn down and removed during the progress of the new construction this season. To provide the necessary space for this building and the other improvements, the car repair shops are now all located on the east side of the river, the old ash pit is removed and two new double pits built a short distance from the present machine shops and near the northern approach to the new engine terminals. Also a portion of the old classification yard was taken up, a rearrangement of portions of the trackage in the yard being contemplated.

The new structure is a forty-one stall house [emphasis added], the inner circle having a diameter of 199 ft. 8 1/4 in., the outer diameter being 407 ft. 11 3/4 in., giving a stall depth of 104 ft. 1 1/2 in., adequate for the largest locomotives in the service of this company, or contemplated for this division. The foundation and substructure is of concrete, the concrete extending to the top of the water table at a height of four and one-half feet above the elevation of the finished floor. The superstructure is of brick with steel columns and roof girders, provision having been made in the plans for a concrete protection encasing the steel work. The roof, supported on the steel structure by heavy wooden purlins, is constructed of two-inch matched spruce sheathing over which is placed a five-ply slag covering.



View of Carbondale Roundhouse Under Construction, D. & H. Co.

A commendable feature of the design is the generous provision made for natural light, a very large percentage of the wall space being made of windows, each stall having approximately four hundred square feet of window area in the outer wall in addition to the windows and louvred openings in the clere story. The wall space under the large windows is taken up with a reenforced concrete slab carried upon projections from the piers supporting the brickwork, in such a manner that both this slab and the window series above it are practically independent of the roof supporting structure, eliminating as far as possible danger of damage to the general structure should an engine run beyond the pits into the outer wall.



Three drop pits are provided, two for pony trucks, and one for the drivers, while directly to the rear of these drop lean to for machine tools which is 20 ft. deep and extends along the width of five stalls. This lean-to will have a standard shop floor, but the roundhouse proper will be floored

with vitrified paving block laid on a 5-in. concrete base with 2-in. sand cushion. This floor will be laid with proper slopes towards catch basins of which there are three each stall, these in turn communicating by vitrified tile drains to the main drainage conduit and thence to the main trunk sewer leading to the river. This conduit is reinforced concrete, and receives also the roof drainage, this being carried in cast iron conductors to the floor line, and in tile lines below the floor. The brick floors are arched slightly between the rails of the tracks to the pits, but laid level between the rails of the 24-in. track, which, to facilitate repairs, follows the entire circumference of the outer circle between the end of the pits and the outer wall.

The cast iron smoke jacks used were made by Paul Dickinson, Incorporated, Chicago. The building is heated by a direct system with coils along the pits and walls, the mains being carried in the concrete conduit around the inner ends of the engine pits. The boiler washing system was installed by the National Boiler Washing Company, of Chicago, the mains of this system, together with the air pipes, being carried on supports suspended from the steel roof girders, with drops at every other column.

The roundhouse is served by a ninety-foot, cone-roller center turntable made by the American Bridge Company, and equipped with a Nichols electric tractor [emphasis added]. The turntable is mounted on a reinforced concrete foundation sunk to hardpan, and the pit is walled and paved with concrete.

Attached to the roundhouse is a rest house and locker room for the engineers and trainmen, and the upper stories of this same building will serve as offices for the master mechanic and his supervising force. This building has concrete and brick walls closely following the lines of the roundhouse design, and will be completely equipped for the convenience and comfort of the employees while at the same time providing for the expeditious handling of the business of the department.

The oil house provided is a two-story reinforced concrete structure with brick exterior walls above the second floor, but with concrete floors and roof, all windows being protected by heavy wrought iron shutters and the doors all tin-lined. The building is surrounded by a platform on two sides and contains a very complete system for oil distribution furnished by Gilbert & Barker. Near the roundhouse is located the new power plant, which is housed in a concrete and brick structure approximately 66x 90 feet in size, with roof of construction similar to the roundhouse, supported on steel girders. The boiler room at present contains 800 H. P. of Babcock and Wilson boilers, with foundation space provided for double this capacity in the present building, while for future needs, ground space is reserved for the extension of the entire building to the north. The boilers are served by a reinforced concrete chimney built by the General Concrete Construction Co. The engine room adjoining the boiler room contains the air compressor and blower equipment, with an ample capacity traveling crane; while in the pump room below is installed the general pumping equipment and the tanks and equipment incident to the boiler washing system. All the floors in the power plant are of concrete or reinforced concrete.



Fuel for the boilers is delivered to the bunkers at the powerhouse by gravity from hopper cars spotted on the trestle over the bunkers, and the ashes are handled by special equipment from the tunnel below the fireboxes to empty cars on this same elevated track. For coaling engines the new coaling tipple of large capacity is constructed of wood on concrete foundations, the light grade of the long trestle approach to the bins greatly facilitating the ease of placing cars over the bins. Special measuring pockets will be used for the coal. Sand storage bins with drying house will be reached by this same elevated track.

The water supply and fire protection are afforded by the city system.

The work was done by G. E. Scott, of Pittsburgh, Pa., under the supervision of V. Z. Caracristi, consulting engineer for the Delaware & Hudson Company." [The Colonie project, see page 257, below, was also under the immediate supervision of Mr. V. Z. Caracristi, Consulting Engineer of the Delaware and Hudson.]

When completed in 1911, this roundhouse had 41 stalls and a 90-foot turntable that was powered by electricity. The 1910/1911 building contained 140,000 square feet. A 105-foot turntable was installed in 1926. This turntable was 2 ½ feet too short for the Challengers. If a Challenger had to enter the roundhouse, the turntable was used as a bridge just to gain access to a roundhouse stall. To turn a Challenger at Carbondale, Oneonta, or Colonie a wye track was used.

Here is the account ("Record Turntable Feat") from *The Delaware and Hudson Company Bulletin* of May 1, 1926, pp. 7-9, 13-14, of the installation, on March 22, 1926, of the 105-foot turntable in the Carbondale roundhouse.

# Record Turntable Feat

*Old Ninety-Foot Table at Carbondale is Removed and New Table of One Hundred and Five Feet is Installed in Four Hours, Four and One-half Minutes*

FIFTY-FIVE years ago, according to HENRY GRAMER, mason foreman on the Pennsylvania division, who was present at the time and seems to recall the incident quite well, the first turntable at Carbondale was installed. It was a fifty-foot cast iron table equally divided into two spans, and its installation occupied the time of the Bridge and Building force on the division for two or three days. The table was slid into its pit on skids and then jacked into place, a laborious as well as dangerous task.

What eventually became of that table matters little. Suffice it to say, however, that other tables of greater length and greater strength supplanted it as the weight and size of locomotives increased until in recent years a ninety-foot center balance table had been in use. But again the need of a larger and stronger table became imperative and so on March 22, last, this table was replaced by a twin span, non balance, table of one hundred and five feet.

Incidentally, too, MR. GRAMER was an interested spectator on this occasion.

Of even more interest, perhaps, is a most unusual time record which is buried back of these meagre facts. No longer are turntables installed with skids and jacks. The mere matter of size and weight precludes this, while along with the development of power there has been a corresponding improvement in working methods intended to expedite the solution of mechanical and other

problems and produce a better quality of workmanship.

To render inoperative a roundhouse of the size of the one at Carbondale, in this day, is a matter of serious moment. But this is what results, nevertheless, when it becomes necessary to install a new turntable, and it is only by hearty cooperation on the part of the various working forces concerned that such a problem can be handled expeditiously.

It was this sort of cooperation, enthusiastically given, that made possible the removal of the ninety-foot table and cribbing that had permitted a continuance of its use while the pit was being prepared for the larger table, and the installation of the new table in four hours four and one-half minutes. Altogether, the roundhouse was inoperative for only five hours thereby causing the operating department practically no embarrassment, all power on hand having been turned in anticipation of its possible use before being

placed on the "farm."

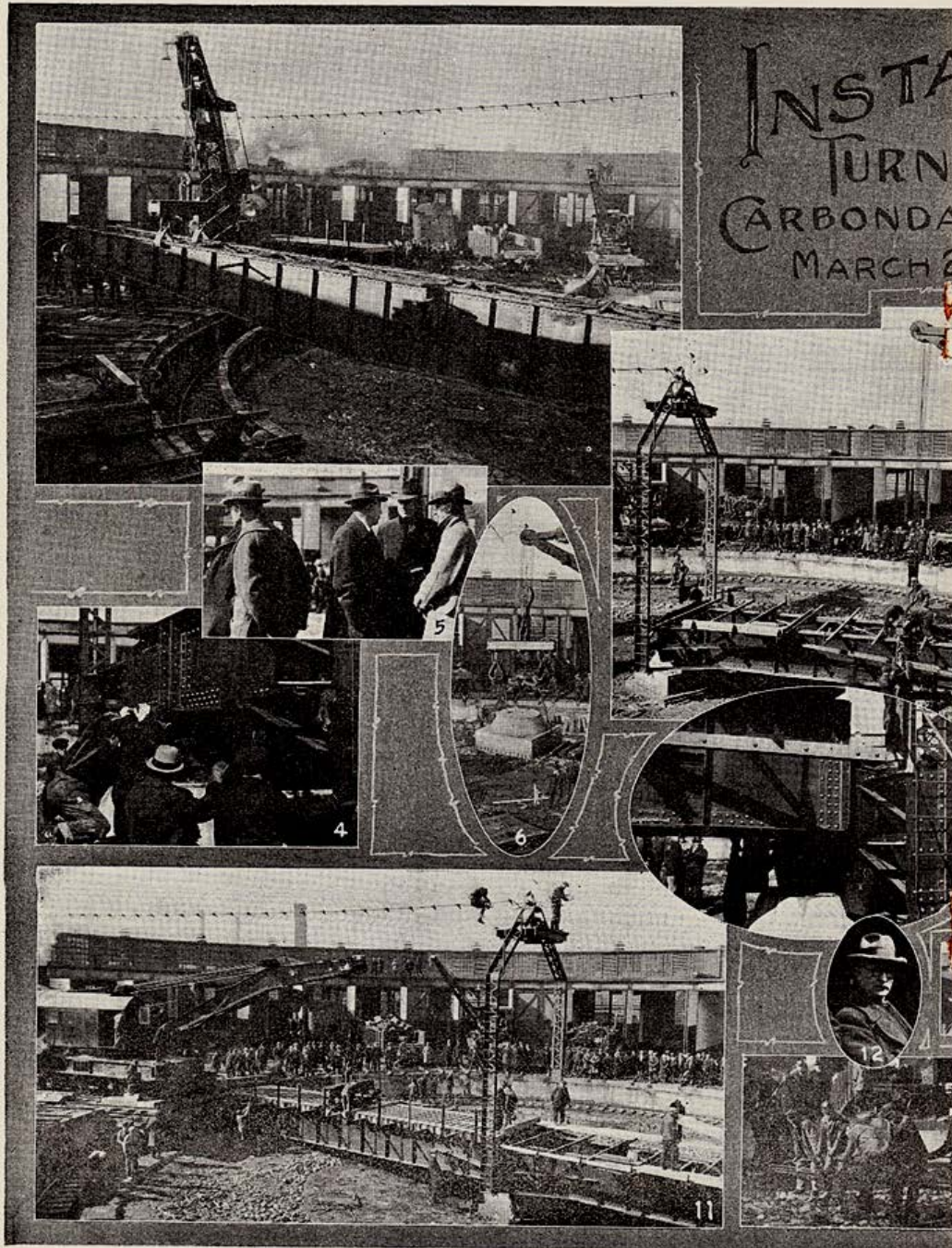
Throughout the performance each step was followed with keen interest by a large crowd of employes, officials of the Company and other railroads, and city folk. All were impressed by the clock-like precision with which so many men, approximately 120, went about their work. There was no confusion, no needless excitement, and, fortunately, no serious accidents. It was in every

(Continued on Page 13)

## The Story in Hours and Minutes

DESCRIPTION OF WORK	STARTED a. m.	COMPLETED a. m.
Power turned off.....	6:45	
Removal of old turntable house .....	6:45	6:54
Removal of deck of old table.....	6:45	7:10
Removal of old table.....	7:20	7:49
Removal of cribbing.....	6:45	10:30
Removal of old center.....	7:49	7:55
Placing new concrete precast center .....	7:59	8:29
Placing new concrete bearing.....	8:34	8:37
Placing new table—A span..	8:53	9:35
Placing new table—B span..	9:19	9:37
Installing deck on new table.....	9:37	10:35
Bolting A and B spans.....	9:31	10:30
Power turned on.....	10:37	
First revolution of table....	10:37	10:49½
Turntable out of service....	6:00	11:00

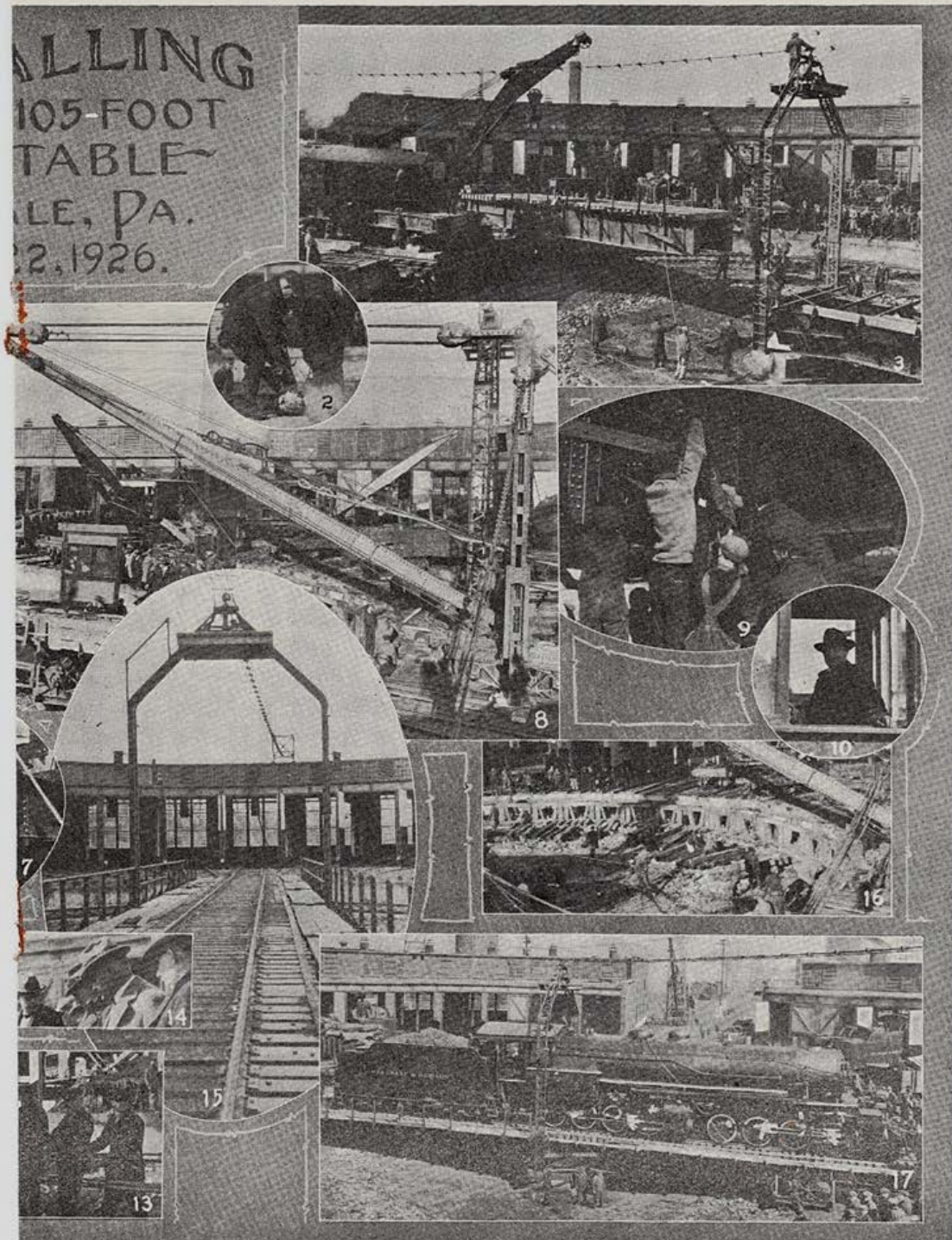




eight

KEY TO PHOTOGR





PHS ON PAGE 6

nine

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## *Key to Views on Pages 7 and 8*

- 1—Removing old table.
  - 2—Pouring spelter.
  - 3—Placing B span.
  - 4—Centering A span.
  - 5—(Left to right) L. G. Conklin, general electrical inspector ;  
H. S. Clarke, engineer, maintenance of way ; G. S. Edmonds, superintendent of motive power ; and F. P. Gutelius, Jr., division engineer, Susquehanna division.
  - 6—Dropping pre-cast block.
  - 7—B span going into place.
  - 8—Placing A span
  - 9—A "pull together"
  - 10—George Burrell, electrical foreman, turning the power on.
  - 11—A and B spans joined
  - 12—M. J. McDonough, division engineer, Pennsylvania Div.
  - 13—On the ropes
  - 14—(Left to right) Mr. McDonough ; Mr. Clarke ; C. M. Gramp, signal supervisor, Susquehanna division ; and A. H. Rice, signal engineer.
  - 15—Across the table, showing overhead wiring.
  - 16—A section of cribbing.
  - 17—First engine turned.
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## *Record Turntable Feat*

(Continued from Page 7)

respect a feat that will ever remain an interesting record in the progress of the Company.

The factors contributing to the success of the installation, as afterward set forth in the report of M. J. McDONOUGH, division engineer, upon whom the responsibility for the successful completion of the work rested, were as follows:

Cooperation of Transportation and Mechanical departments.

Careful study of details.

Accuracy of the engineers in laying out and checking the work.

Accuracy of preliminary work of the Bridge and Building foremen, Bridge Erecting foremen, and the Electrical foreman.

Careful planning of the work for installation.

Ground was broken on October 12, 1925, for the new circle wall, the total excavation amounting to approximately 1,400 cubic yards. Some difficulty was experienced due to the fact that two other turntables had been installed in the same location but at a lower elevation. It became necessary, therefore, to remove considerable old stone masonry from back walls, ring walls, pit walls and elsewhere.

Placing of the concrete (1-3-6 mix) footing of approximately 275 cubic yards followed closely the excavation work and was completed on November 25. On December 17 construction of the circle wall atop the footing and bound to it, was started and was completed on December 29, 169 cubic yards of concrete (1-2-4 mix) having been used. Construction of the concrete (1-2-4 mix) back wall of 114 cubic yards, followed on January 2, 1926, and was completed on January 14, steam pipes having been installed to keep the fresh matter from freezing. Meanwhile, a ten-ton precast center block of five cubic yards of concrete (1-2-4 mix), reinforced with steel rods and provided with anchor holes to permit it being secured to the old foundation, and other anchor holes for the center casting, was designed and completed.

Considerable preliminary work likewise had to be done by the electrical forces. This included the installation of new transformers at the rear of the roundhouse from which power was to be conveyed to the power collector on the table through a three conductor 00 cable strung on messengers extending over and above the roof of the roundhouse.

The new table was delivered on March 7, at which time all work except that of assembling, last-minute electrical work, and the framing of the ties, had been completed. The trucks were placed opposite each other on the circle rail at the location where the table first would be set,

tested and carefully blocked. In much the same manner each of the two spans was placed on blocking in its respective position at the side of the pit. Installation of the deck ties, conduits, wiring for motors and electric lights, electric light support poles, gallows frame for power collector at the center, control cabin, controllers, resistances and other work was completed so far as possible in preparation for the final movement into the pit.

About this time S. L. Satterstein, a representative of the Bethlehem Steel Company which had furnished the table, visited Carbondale. Several meetings of the supervisory officers held in the Division Engineer's office were attended by him and all profited by his experiences in connection with other similar installations. It was at these meetings, also, that the general scheme for removing the old and installing the new table without confusion and in a minimum length of time, was developed. Drawings showing the exact location of each machine, each large item of material and the movement through which each would have to pass on the date of installation were prepared. From these a program and schedule of work was drawn up and later read at a meeting attended by the Division Superintendent, Master Mechanic and foremen, Divisional Car Foreman and Wreckmaster, Electrical Supervisor and foremen; Bridge Erecting foreman, supervisors, engineers and foremen of the Maintenance of Way department.

Just prior to installation balance points were determined and marked on the halves of the new table, cranes were put through the movements that would be required so that distances might be determined and checked, and other important details received the same careful attention. All equipment was placed on the radial tracks of the roundhouse, excepting a bridge erecting crane, and consisted of a ditcher on Track 7; two low side gondolas on Tracks 5 and 9 for the removal of temporary carry; flat car on Track 12 for controller cabin of old table; two flat cars on Track 13 to receive the discarded table; a locomotive crane on Track 15; an electric gasoline crane on Track 24; low side gondolas on Tracks 22 and 26 to care for temporary cribbing; a ditcher on Track 33; and low side gondolas on Tracks 31 and 35 into which temporary carry and other material from the pit was to be loaded.

Beginning at midnight, the Mechanical and Transportation departments, working together, removed from the roundhouse and turned all engines that would be needed during the time the new table was being installed. As the removal proceeded, radial rails were cut at the face of



## *The Delaware and Hudson Company Bulletin*

the new back wall. At 6 a. m., March 22, the roundhouse was empty and between then and 6:45 a. m., the bridge department's erecting crane was placed in position in the westerly entrance and all other equipment was made ready for the beginning of the transfer.

Power was turned off at 6:45 a. m., and the table turned over to the Maintenance of Way forces. Removal of the old table began at once and at 7:49 a. m., it had been loaded on the two flat cars in Stall 13, being handled in the final movement by Wrecking Crane No. 30020 which had been brought to the scene from the Susquehanna division and which was in charge of BARNEY BRENNAN, veteran wreckmaster on the Pennsylvania division. Meanwhile, the center of the old table was removed by the bridge erecting crane in charge of "Ed" DOWER, bridge foreman.

The old foundation then was cleaned and the precast center block placed at 8:29 a. m., being anchored by means of four bolts, one-quarter inch of cement being used to obtain an even bearing. At 8:37 a. m., the center bearing casting was in place and anchored to the precast block by eight bolts.

Next came the placing of the two spans, the A span, weighing approximately thirty-five tons and including the gallows frame, control cabin and dead engine hauler, being the first to be placed in the pit. It was picked up at 8:53 a. m., by the bridge erecting crane and was in position at 9:35 a. m. The B span of approximately twenty-eight tons, having been picked up by the wrecking crane during the time that the A span was being adjusted to the center bearing, was in place two minutes later. The work of bolting the two spans together was started at 9:31 a. m., and completed at 10:48 a. m. Meanwhile, the electrical work had been completed at 10:20 a. m., the work on the deck undertaken and finished at 10:30 a. m., and all rail, track carries and cribbing removed, leaving the united spans ready for service.

Power was turned on at 10:30 a. m., the motors started at 10:37 a. m., and the first revolution completed at 10:49½ a. m. Some delay was occasioned during the first revolution to permit of a careful breaking in of the motors and because of the interference of a radial rail which had not been cut to proper length. At 11 o'clock the table was turned over to the Mechanical department and Locomotive No. 1612 was turned immediately.

The table being of the non-balance type automatically distributes its dead and live loads equally between its center and circle rail foundations, the two driven wheels receiving 36 per cent of the total weight on truck wheels for the unloaded table and about 28 per cent when loaded, with any weight engine. Its four equalizing trucks, two at each end, together with the center make it a five-point bearing table.

Structurally, it consists of two simple shallow

deck spans, each flexibly joined to a transverse girder at the center. These flexible connections provide for the simple span deflections, allow of adjustments to ordinary errors of elevation between circle track and center pier, and give the span ends freedom to take inequalities of level in the circular track.

Two General Electric Company motors, type MTC-Form M-220 volts, 3-phase, 25 h. p., 565 RPM, geared to drive wheels and controlled by General Electric Company controller type T-52W and service control panel type CR-7409-Y1 operate the table. These motors can be used as a multiple unit or separately as may be desired and are arranged one on each end of the table on the same side on cast steel frame trucks. In addition there is another General Electric Company motor, type MTC-Form M-220 volts, 3-phase, 25 h. p., 565 RPM., to operate dead engine hauler, located on the end opposite from the operator's cabin and from the other two motors. All motors are interchangeable and positive control is assured by the presence of efficient foot brakes and truck frictions.

T. E. O'BRIEN, bridge and building master, was responsible for the work in general, being assisted by J. LEROY VARKER of the division engineer's field force; W. E. FIELDING, general foreman, Bridge and Building department; and J. H. PHILLIPS, bridge and building supervisor. JAMES J. CAWLEY, carpenter foreman, and JAMES MADDEN, extra gang foreman, directed the preliminary work. The steel work and the handling of the table was supervised by J. B. CLANCY, supervisor of bridges, and his assistant, E. DOWER. F. C. TIMMONS, electrical supervisor, assisted by GEORGE BURRELL, electrical foreman, and JESSE WILLIAMS, line foreman, was in charge of his particular line of work.

Entertainment of the visitors at dinner was arranged by MR. PHILLIPS and altogether 125 persons were splendidly accommodated in camp cars conveniently located.

Among the visitors were to be noted J. D. Rahaley, division superintendent; C. M. Lewis, division engineer; L. H. Edwards, maintenance inspector; F. A. Knapp, master carpenter, and Henry Baneman, master carpenter, all of the Erie railroad; F. W. Badger, division superintendent; F. L. Cagwin, roadmaster, and F. J. Barry, master mechanic, of the New York, Ontario and Western; Frank Loughnam, division engineer; L. F. Wenner, bridge and building master, and F. C. Stehle, general bridge inspector, of the Lehigh Valley forces.

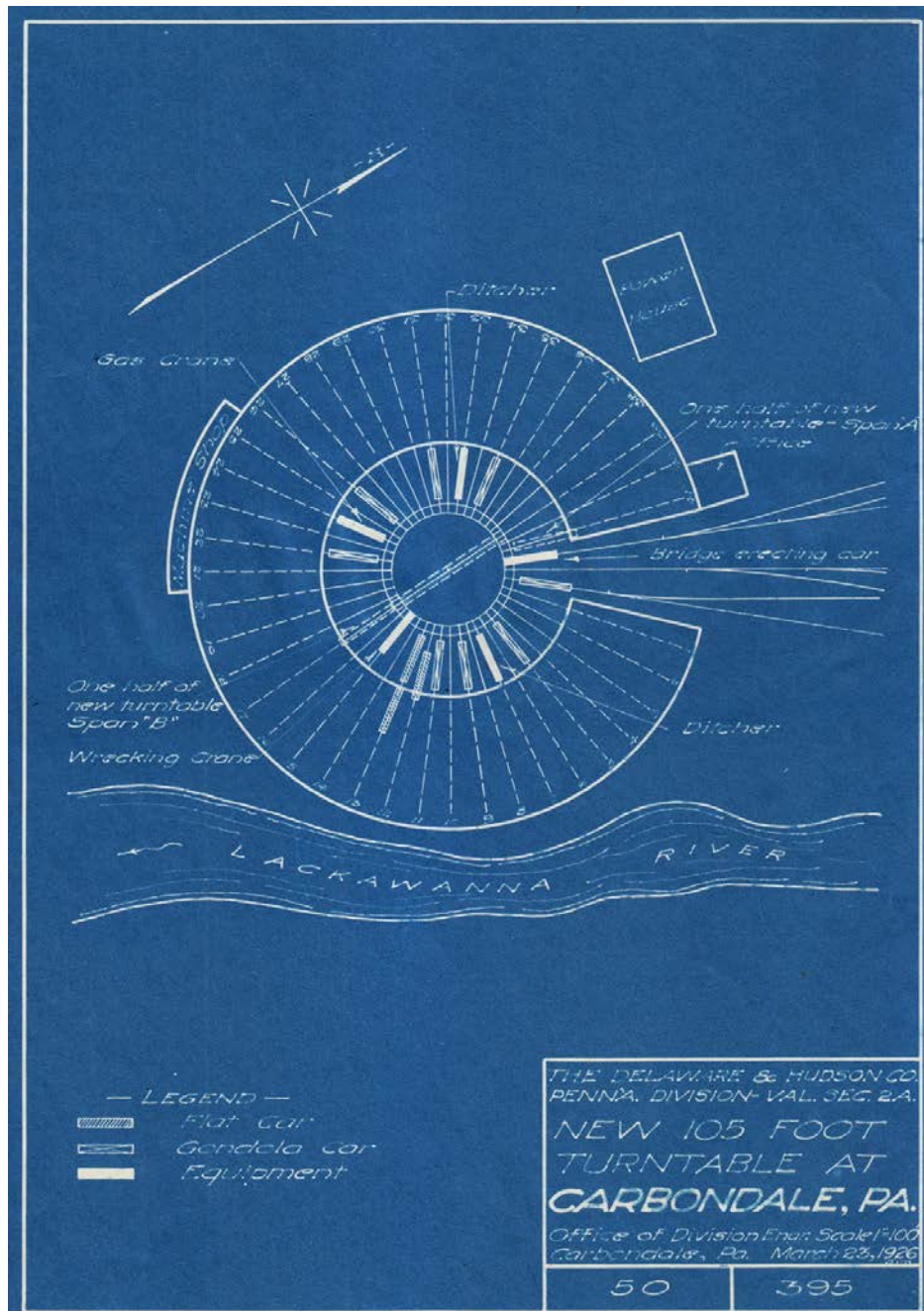
Passenger: "Please, conductor, will you help me to get off the train?"

Conductor: "Certainly, madam."

Passenger: "You see, it's this way. Being rather stout, I have to get out backwards—the porters think I'm getting in—so they give me a shove and say, 'Urry up, ma'am.' I'm five stations past where I want to go now."—*Exchange.*

In the collection of the Carbondale D&H Transportation Museum is a professionally produced (doubtless by the D&H) album of photographs and text about the installation of the 105-foot turntable in Carbondale on March 22, 1926. Here are the contents of that album:

**Carbondale Turntable (105 foot) Installation, March 22, 1926;** original book in the collection of the Carbondale D&H Transportation Museum, Inc.





THE INSTALLATION OF A NEW 105 FOOT THREE POINT TWIN SPAN  
TURNTABLE, REPLACING A 90 FOOT CENTER BALANCED TURNTABLE  
AT CARBONDALE, PA., MARCH 22, 1926.

At Oneonta, N. Y., January 7, 1924, a new 105 foot three point twin span turntable was installed, replacing a 75 foot center balanced turntable. This work was done in what was then considered record time. Only seven (7) hours and thirty-eight (38) minutes was consumed in removing the old turntable and installing and placing in operation the new table, and the Motive Power Department was deprived of the use of the engine house only ten (10) hours and thirty (30) minutes.

Again, on March 22, 1926, at Carbondale, Pa., a new 105 foot twin span turntable, similar to the Oneonta turntable, was installed, replacing a 90 foot center balanced turntable. The publicity given the Oneonta performance, together with the great amount of interest shown by the different departments of the Railroad, acted like a stimulant to the Pennsylvania Division forces, and they removed the old turntable, installed and placed in operation the new turntable in the very remarkable time of four (4) hours, four and one-half ( $4\frac{1}{2}$ ) minutes, with the engine house out of service only five (5) hours, reducing by approximately one-half the previous record of installation at Oneonta.

Perhaps, it would be well, at this time, to describe the new turntable and outline the methods employed in carrying out the work of installation, in order to make more clear just what an installation of this magnitude in four hours, four and one-half minutes really means.

The new turntable is of the non-balance type, distributing its dead and live loads equally as between the center and circle rail foundations. Its four equalizing trucks, two at each end, together with the center, make it a five point bearing table.

Structurally, it consists of two simple shallow deck spans, each flexibly joined to a transverse girder at the center. These flexible connections provide for the simple span deflections, allow of adjustments to ordinary errors of elevation between circle track and center pier, and give span ends freedom to take inequalities of level in the circular track.

The transverse girder besides loading the center proper, affords a support for the lateral bracing, the power intake arch; and as a jacking beam, affords two easily accessible journal-box jack seats for releasing the center casting.

The center is bolted beneath the junction of the lateral system and the transverse girder, and consists of the usual bridge shoe unit of upper shoe, horizontal pin and lower shoes, set on a flat phosphor bronze disc which in turn rests on the anchored base or distributing casting.

This center, though simple and compact, embodies several new and important features. For example, it is designed to take the braking force of any engine by means of a phosphor bronze ring around a vertical pin-projection of the base casting. The horizontal, enclosed, one piece pin equalizes the load on the disc, transmits all lateral forces to the lower shoe and through the bronze ring to the base casting. The enclosed disc has two wear surfaces, both with provision for self-cleaning, and is oil immersed and oil trapped, hence can run in flood waters without damage.



The center is so constructed that by raising the table not more than 1/8" the complete show and disc may be removed, inspected and replaced in a fraction of an hour by from four to five men equipped with journal box jacks, wrenches, ropes and gas pipe skids.

The anchorage to foundation also provides for full engine breaking shear, having turned bolts through drilled holes in the base casting with ports for the escape of grout displaced when entering bolts.

#### TRUCKS

There are four trucks, two on each end, which have cast steel frames of "H" type heavily flanged and braced. One of the trucks on each end is so constructed to carry the motors which propel the table. Each frame is under-hung from the radially aligned axles of two wheels and supports in its central portion, the super-imposed girder loads on two widely spaced and radially aligned trunions.

This construction insures:-

Perfect equalization of girder loads on the two wheels of each truck.

Entire freedom of truck adjustment to girder level or deflections by pivoting on the rail.

Proper truck base whether in service, wedged up or in transit, since the truck frame is formed with these points in view.

Quicker installation on account of motors being placed on the truck frames.

Additional details hold trucks in radial alignment and yet allow of perfect adjustment to spans. The wheels are standard forged, pressed or rolled steel car wheels with flanges removed and tread properly tapered to the center of the table. The bearings, four per truck, six per end of table, are standard MCB journals with standard boxes, wedges, brasses, lids, dust guards, waste and lubricants. On the frame which carries the motors one of the wheels is not equipped with standard MCB journals but is equipped with ordinary Babbit bearing which is oiled by means of oil cups.

#### MOTORS

The turntable is operated by two General Electric Company motors, type MTC-Form M-220 volts, 3 phase, 25 H.P., 565 RPM, controlled by General Electric Company controller type T-52W and service control panel type CR-7409-Y1. The panel is so arranged that motors can be run as multiple unit or separately. Motors are arranged one on each end of the table on the same side on cast steel frame trucks. In addition there is another General Electric Company motor type MTC-Form M-220 volts, 3 phase, 25 H. P. 565 RPM., to operate dead engine hauler. This is located on the opposite side of the table from the operator's cabin and from other two motors. These three motors are interchangeable.

The distribution of loading is such that the two driven wheels receive 36% of total weight on truck wheels for the unloaded table and about 28% for loaded, with any weight engine. Motors are geared to drive wheels. The power units, which are on each end of the table, are equipped with efficient foot brakes which, together with the truck frictions, afford ample and positive control.

#### ADVANTAGES

Advantages of this type of table over the balance type are as follows:-

- (a) It is cheaper in first cost for total installation, pit and table, and particularly so in the case of replacement. (b) It is of cheaper and easier maintenance. (c) The simple pin and disc center is not affected by high water in a flooded pit. (d) The trucks are MCB standard.
- (e) In operation, engines need not be balanced, resulting in saving of time required for disposition of engines. (f) Table will turn any equipment having total wheel base not exceeding 104 feet.
- (g) Table rail and approach rails are level at all times which eliminates damage to the engine frames and table.

#### CHARACTER OF WORK AND METHODS EMPLOYED

Carbondale, located at the source of our hard coal supply, is one of our busiest terminals, and particularly so, since the settlement of the recent suspension of the anthracite mines. Therefore, in order to avoid delays to the operating and motive power departments, the installation must, from necessity be made in as short a time as possible. The day of installation, all locomotives to be used for the portion of the day in question, having been previously placed on the engine farm for distribution as needed, the new turntable was placed with no delays to the operating department, and as mentioned previously, with only five (5) hours interruption to the use of the engine house.

The total work of installation may be considered as being divided into two parts.

First. Preliminary work, carried out under traffic, which consisted of excavating for and constructing of the new ring wall and circle track, the supporting of the engine house tracks between the new and old back walls, the removal of the old back wall and its replacement with temporary cribbing, the constructing of a new electric power line and the preparation of the new turntable to avoid the extra work on same after placing it in position in the pit.

Second. The final work, not performed under traffic, which consisted of removing the old turntable, the removing of cribbing and track carries, and the installing of the new turntable and placing it in operation.

#### PRELIMINARY WORK

On October 12, 1925, work was started, commencing with the excavation for the new circle wall and the removal of the old back wall. This work was done with a ditcher loading dump cars, which were placed on the house tracks and as filled were dispatched for dumping. The excavation by the ditcher was completed November 14, 1925. Between these dates there were only five radial tracks out of service at any one time. As the excavation was made, temporary bents and rail carries were installed to support the radial tracks and return them to service. The total excavation amounted to approximately 1400 cubic yards, and occasioned considerable difficulty, due to the fact that two other turntables had been previously installed at this location at a lower elevation which made it necessary to remove the old stone masonry from the back walls, ring walls, pit walls, etc.

As the excavation progressed, the concrete footing which was 1-3-6 mix and amounted to 275 cubic yards, was started, and followed the excavation around the entire circle, being completed on November 25, 1925. As the footing was placed, tubes made of scrap boiler flue, six feet long, were placed vertically under the proposed location of the new circle rail at approximately 6' 9" centers, the elevation of these tubes being 2" lower than the elevation for the base of the new circle rail. The tubes were filled with grout, topped with wooden plugs which were cut off at the elevation for the base of the circle rail. This was the method used in obtaining true circle and the proper elevation for the circle rail.

On December 17th the work on the circle wall was started on top of the footing and bound to it. This was of 1-2-4 mix and amounted to approximately 169 cubic yards and was completed on December 29th. Before pouring the circle wall, the circle rail which was of 130# section, was installed and supported at its correct elevation and location, with circle rail, anchors and bolts attached so that when the circle wall was poured the circle rail anchors and bolts were embedded in the concrete and the circle rail firmly held to elevation and location.

While the work of constructing the circle wall was being carried on twenty-four forms, six feet long, were being constructed for the new back wall. Six of these sections were used at each location which allowed us to complete a back wall in nine 30' sections and with expansion joints.

The back wall was started on January 2, 1926, and consisted of 1-2-4 mix and amounted to approximately 114 cubic yards. This work was completed on January 14, 1926.

This work was carried on during cold weather and, in order to prevent the concrete from freezing, rows of steam pipes from the plant in the round house were constructed, and sufficient steam provided to furnish necessary heat for protection to concrete while setting.

While this work was in progress a precast center block reinforced with steel rods was being fabricated, which consisted of 1-2-4 mix, being approximately five cubic yards in capacity, weighing approximately ten tons. This block was so constructed that it could be easily handled on the day it was to be installed with necessary provisions being made for attaching lifting hooks. The block was also provided with anchor holes on each corner to anchor to the old foundation and also anchor holes for the center casting. This was made necessary on account of the difference in the design of the old table and the new.

On January 14th the preliminary work which was well under way, was interrupted until the receipt of the timber for the top of the back wall. This was received on February 24, 1926, and consisted of 12x12 long leaf yellow pine which were framed to conform with the circle back wall and to which the radial rails were spiked.

While working on the installation of the new walls, circle rail and track carry for the radial tracks, the electrical forces carried on their preliminary work which consisted of stringing new power lines to the center of the pit to have ready for connecting with the power collector of the new turntable at the day of installation.



Two separate and individual sources of power are provided, a regular source of 2300 volts stepped down through transformers to 220 volts, and an emergency source of 220 volts direct. Either can be used simply by throwing a triple pole double throw switch, located in switch board building near the transformers.

The transformers used in connection with the bringing of the power to the new turntable were located at the rear of the round house and current from them to the power collector of the table was conveyed through a three conductor "00" cable strung on messengers extending over and above the roof of the round house. On top of the round house opposite each other two "H" fixtures consisting of steel frames and cross bars were set. Four messengers in catenary form were extended from "H" fixture to "H" fixture and secured to cross members by means of 1"x12" running thread eye bolts to provide for slack take-up. The messengers were held horizontally apart by 3/8" x 2" x 22" iron spreaders approximately 3 feet apart. The spreaders are drilled for 1/2" cable clamps to hold them to messengers, with additional drillings to provide for the running of new messengers and removal of old without interruption to service. To these spreaders wooden clamps were fastened to support electrical cable. Messenger wires and cables were installed, old power cable removed and the old table power collector connected temporarily with the new cable, providing advance service test of new transformer and cable installations, also providing quick method of connections to the power collector of the new table. The cross members of the "H" fixtures, being of 1 1/2" x 4" angle iron spaced 1 1/2" apart, provide slot for take-up bolts and permit of horizontal movement of messengers for perfect alignment. This arrangement also provides means for movement of cable messengers off center as necessary to establish clearance for setting that half of the new turntable which carries the gallows frame.

The new turntable was delivered on the ground March 7th, at which time all work was completed, with the exception of the assembling of the new table, the framing of turntable ties and some electrical work. After the new turntable was delivered on the ground, the steel gang went over the steel work, make all connections which could be made prior to the actual installation, checked over the material and placed same so as to be available without delay on the date of installation. A representative of the Bethlehem Steel Company was in attendance at this time and gave the company forces the benefit of his experience in other installations.

The trucks for the new turntable were unloaded, placed and blocked in the pit on the new circle rail opposite each other at the location where the new table would be first set. This permitted the table being placed direct on the truck mountings at the day of installation.

The new table, being of the twin span, was in two halves which were unloaded and supported on blocking on opposite sides of the pit at the locations shown on the attached sketch. Everything that could be done on each half prior to installation in pit was done, including such work as installing deck ties, conduits, wiring for motors and electric lights, electric light supporting poles, gallows frame for power collector at the center, control cabin controllers, resistances, etc.

The two spans were numbered as the "A" and "B" spans. On the "A" span the operator's house and motor for the dead engine hauler were installed, also the gallows frame. This allowed the electrical forces to install all necessary conduits and wiring for the motors except the joining up of the conduits at

connections between "A" and "B" spans which was taken care of later by two conduit unions.

As the number one and number two motors were not on the turntable spans but on the trucks which were at this time in the pit, the electrical forces made temporary connections from span "A" to these motors and both were tested before the installation. The motor for dead engine hauler, which was on the opposite side of the control cabin, was installed in its proper position and all permanent connections were made.

Also before the day of installation the bridge erecting crane and locomotive erecting crane raised the respective halves of the new table that each was to handle, determined and marked the balance points, so that on the day of installation no time would be lost as all that would be necessary would be taking hold of the halves of the table at the pre-determined balanced points and picking up. These cranes were put into all movements that would be necessary to do on the day of installation, and were checked as to distances, etc., to see that they would perform the work that was planned out for them.

During the time the preliminary work was being carried on, there were several meetings of the supervisory officers held in the Division Engineer's office, and general schemes and plans were developed for the removal of the old and installation of the new table with the object in view of eliminating any confusion on the day of installation, and reducing the actual time required to a minimum. At these meetings details were thoroughly discussed and a blue print prepared on which was shown the proposed location of each machine and each large item of material. The movements that each unit of work equipment was to make at the day of installation, were thoroughly rehearsed.

This was worked into a program and schedule and on March 18th a general meeting was held in the Division Engineer's office which was attended by the Division Superintendent, Master Mechanic and his Foremen; Divisional Car Foreman and his Wrecking Master; Electrical Supervisor and Foremen; Bridge Erecting Foreman; Supervisors; Engineers and Foremen of the Maintenance Department. The schedule and program was read and each item which indicated what every Foreman and machine was to do on that day was thoroughly discussed. The Transportation and Motive Power Departments knew what they could expect on that day, re: inconvenience account of the turntable and round house being out of service, and therefore made necessary plans for their motive power on that day in order not to be put to any delay during the time the turntable was out of service.

On the afternoon of March 21st all equipment with the exception of the bridge erecting crane, was placed in the radial tracks of the round house, in addition to cars necessary for the removal of the temporary carry. This equipment consisted of ditcher on track 7; two low side gondolas on tracks 5 and 9 which were used in connection with the removal of the temporary carry; low side gondola on track 11 for temporary track carry; etc.; flatcar on track 12 for loading of the controller cabin on the old turntable; two flat cars on track 13 for loading of the old 90' turntable; locomotive crane on track 15; electric gasoline crane on track 24; low side gondolas on tracks 22 and 26 for the loading of temporary cribbing, etc.; ditcher on track 33; low side gondolas on tracks 31 and 35 for the loading of temporary carry, etc.

At midnight on March 21st the Mechanical Department and Transportation Department arranged to turn all engines and remove from the round house all engines that would be needed for March 22nd. As the locomotives were removed the rails of the radial tracks were cut at the face of the new back wall with acetylene cutting torches and this work was completed at 6.00 A.M. on March 22nd.

At 6.00 A.M. on March 22nd the round house was clear of engines for the installation. Between 6.00 A.M. and 6.45 A.M. the bridge erecting crane, which was placed on the engine farm north of the round house, was brought to the turntable and took its position on the westerly entrance track prepared to start the installation. All other equipment was being prepared to start work at the time the power was shut off. All the Foreman who had charge of men had all necessary tools and equipment placed and ready for work. The power was cut off from the old turntable at 6.45 A.M. and the table turned over to the Maintenance of Way forces.

#### FINAL WORK

At 6.45 A.M. the removal of the old turntable housing was started and lifted out of the pit by the locomotive crane. The removal of the deck from the old table was started at 6.45 A.M. and completed at 7.10 A.M. At 7.20 A.M. the locomotive crane and bridge erecting crane picked up the old turntable and removed it from the pit. The loading of the old turntable on the two flat cars in stall 13 was completed at 7.49 A.M. While the locomotive crane was loading the old table, the bridge erecting crane removed the center from the old table. This was started at 7.49 A.M. and completed at 7.55 A.M. The old foundation was cleaned and the new precast center was brought to the center of the pit. This work was started at 7.59 A.M. and completed at 8.29 A.M. The precast block was anchored to the old foundation by means of four anchor bolts. One-quarter inch of cement mortar was used as a cushion between the old foundation and the new precast center block. At 8.34 A.M. the new center bearing casting was picked up and was in final position and set to line and elevation at 8.37 A.M. The center bearing casting was anchored to the precast block by means of eight anchor bolts. The details for placing the bolts through the center casting into the new center had been taken care of in advance, and the Babbitt material had been melted and was on hand to pour so that no delay was experienced in this work.

The "A" span of the new turntable to which the gallows frame control cabin and dead engine hauler was attached was picked up at 8.53 A.M. and was completely in place at 9.35 A.M. The "B" span of the table was picked up at 9.19 A.M. and was in place at 9.37 A.M. The work of bolting up the two spans was started at 9.31 A.M. and was completed at 10.30 A.M. The installation of the deck on the new turntable was started at 9.37 A.M. and completed at 10.20 A.M. and both No. 1 and No. 2 motors were ready for service at this time.

During the time the old table was being removed and the new table installed the removal of the rail, track carry, etc., was taking place by the use of ditchers and gasoline crane being completed at 10.30 A.M.

The power was turned on at 10.30 A.M., the motors were started at 10.37 A.M., the first revolution of the table was made at 10.49 $\frac{1}{2}$  A.M. and a mallet engine #1612 was turned at 10.55 A.M. The delay in the first revolution was caused by one of the radial rails not being properly cut which interfered with the operation, and ten minutes of the first revolution was lost due to this cause.



The turntable and engine house was returned to the service of the Mechanical Department at 11.00 A.M., being out of service only 5 hours, of which 4 hours- $4\frac{1}{2}$  minutes were consumed in the turntable installation.

The contributory factors to the success of the installation of the turntable in such a short time are -

- (1) Full co-operation of the Transportation and Mechanical Departments.
- (2) The thorough study and orderly arrangement of details both from an engineering and construction point of view, patterned after the methods employed at Oneonta.
- (3) The accurate and orderly manner in which both the preliminary and final work was carried out, which bore evidence of the value of prior instructions of the Foreman and their men.
- (4) The preparation of an efficient program and schedule of operations. A program was prepared and followed out in its entirety. Each Foreman was provided with this program and at no time was it necessary to depart therefrom or to shout orders of any kind to the men during the installation. A print accompanied the program showing location of work equipment to be used, and a copy is hereto attached.

Perhaps a better appreciation of the work accomplished in so short a time may be had by a study of the following time statement of the various important phases of the work both for the Oneonta and Carbondale installations.

PROGRESS OF INSTALLATION

<u>Description of Work</u>	<u>Oneonta</u>		<u>Carbondale</u>	
	<u>Time</u>	<u>Elapsed</u>	<u>Time</u>	<u>Elapsed</u>
Power turned off	8:07		6:45	
Old turntable removed	9:30	1:23	7:49	1:04
Precast block picked up	10:25		7:59	
Precast block to elevation and line	10:52	0:27	8:29	0:30
Center bearing to line & center	11:17	0:25	8:37	0:08
"A" frame and span picked up	11:26		8:53	
" " " " in place	12:20	0:54	9:35	0:42
"B" span picked up	11:25		9:19	
"B" span in place	12:40	1:15	9:37	0:18
Bolting up span started	12:41		9:31	
" " " completed	3:30	2:49	10:30	0:59
Electrical work started	12:00		9:19	
" " " completed	3:05	3:05	10:20	1:01
New deck started	12:20		9:31	
New deck completed	2:30	2:10	10:30	0:59
Removal of cribbing com- plete	2:30		10:30	
First revolution of table	3:45		10:49 $\frac{1}{2}$	
Total elapsed time of in- stallation		7:38		4:04 $\frac{1}{2}$
Total elapsed time engine house out of service		10:30		5:00

The accompanying photographs illustrate remarkably well, several of the most important moves as indicated by the above time statement.

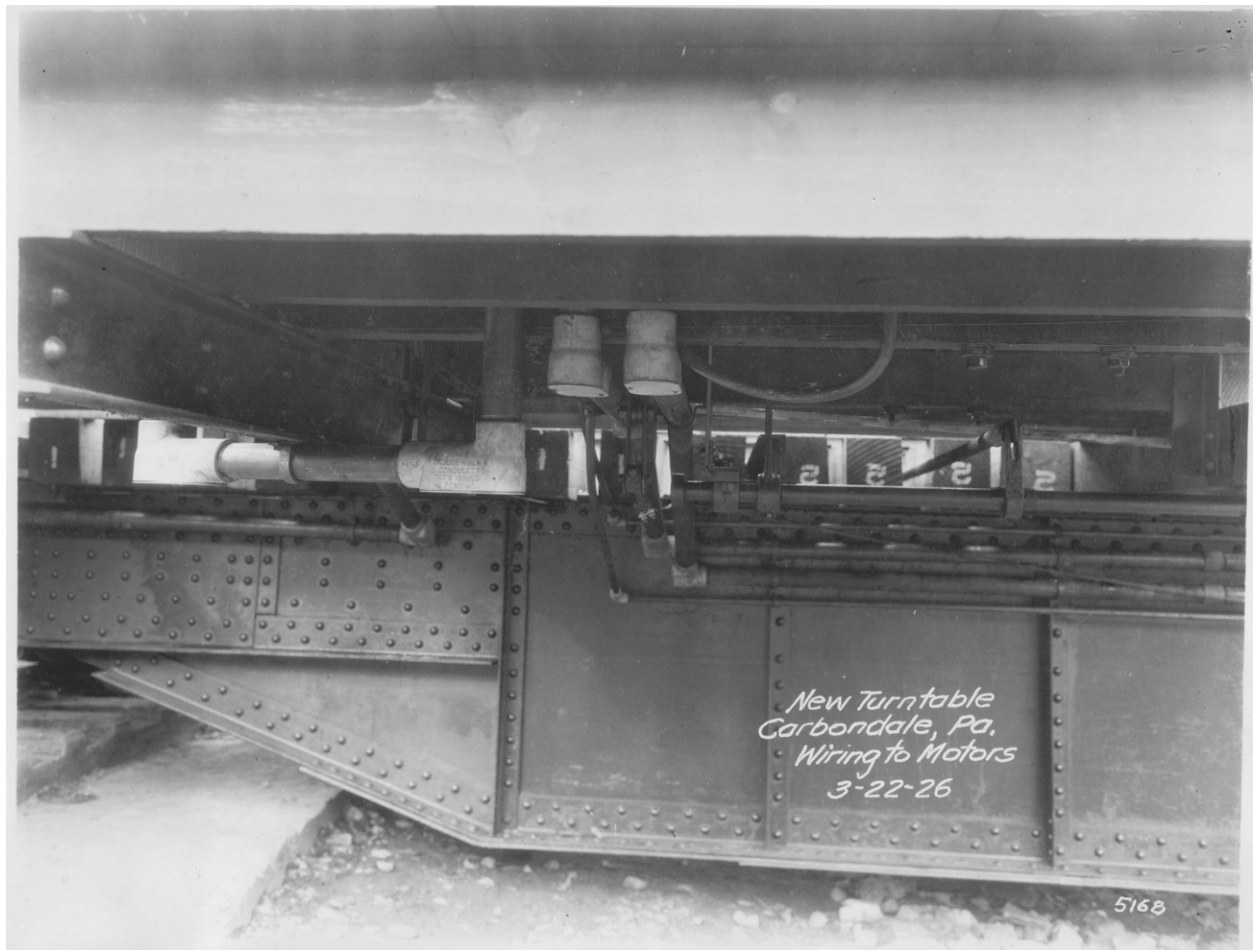
In order to become familiar with this type of installation, officials from other divisions of the railroad were called upon to witness the installation and officials of neighboring railroads were invited and attended. They were unanimous in their opinions that great credit was due all who co-operated for the efficient and able manner in which the work was handled.

Dead Engine Puller





## Wiring to Motors



Controller on Table



7:15 A. M. Lifting Old Table Out





7:22 A.M. Old table in air, moving to left



7:30 A.M. Removing Cribbing



New Turntable  
Carbondale, Pa.  
Removing Cribbing  
7:30 A.M. 3-22-26  
5148

7:49 A.M. Old Table Loaded on Cars



*New Turntable  
Carbondale, Pa.  
Old Table Loaded on Cars  
7:49 A.M. 3-22-26*



7:59 A.M. Lowering Pre-cast Center Block into Position



Snapshot inserted in the album:

Lowering Pre-cast Center Block into Position



8:29 A.M. Center Block Completed





9:00 A. M. Swinging in New "A" Span



9:20 A.M. Swinging in "B" Span



9:35 A.M. "A" Span in Position





9:37 A.M. "B" Span in Position



9:45 A. M. Placing Ties and Rail



10:37 A.M. Moved under Own Power





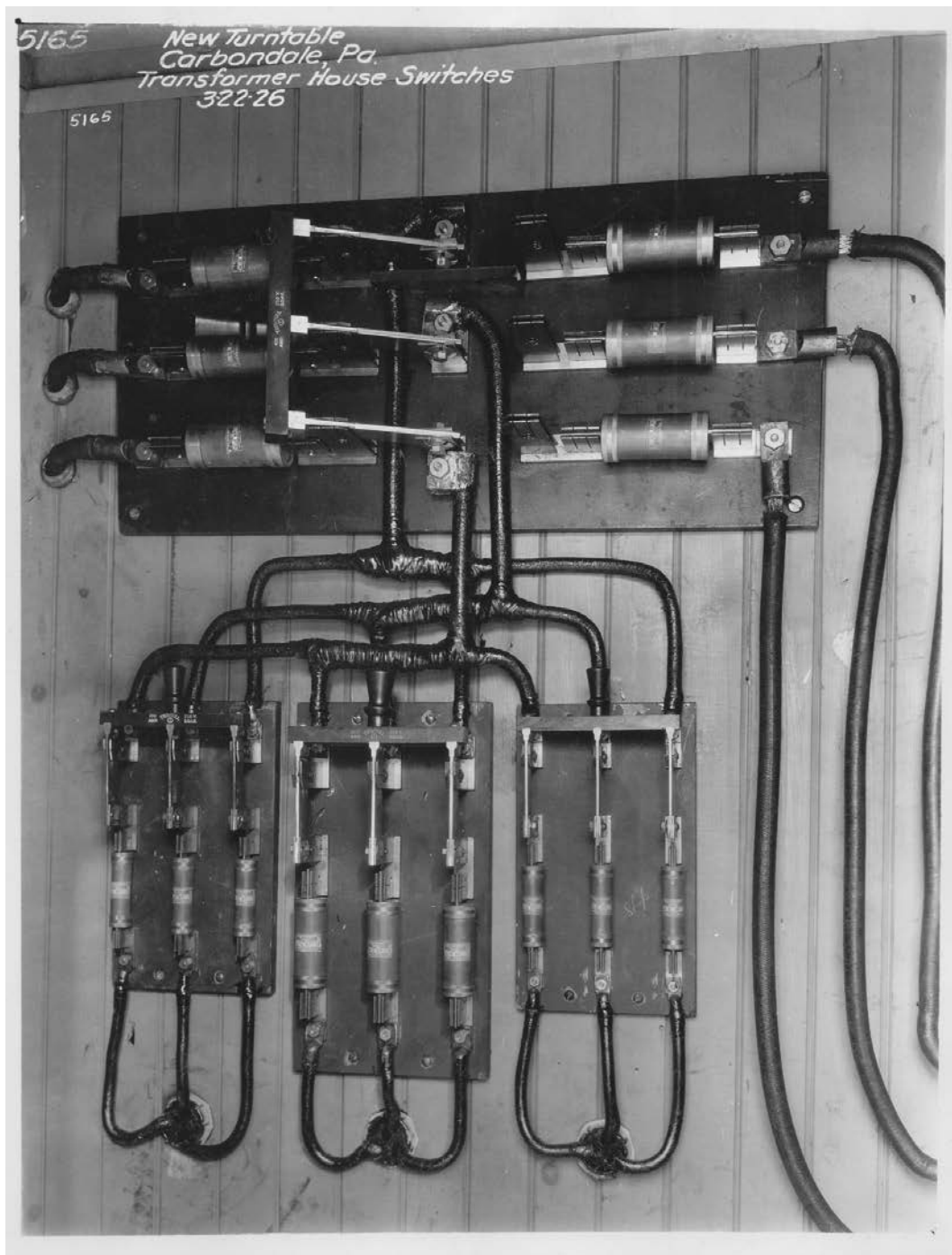
10:55 A.M. First Loco (1612) on Table



Electric Cable and Cable Support



# Transformer House Switches

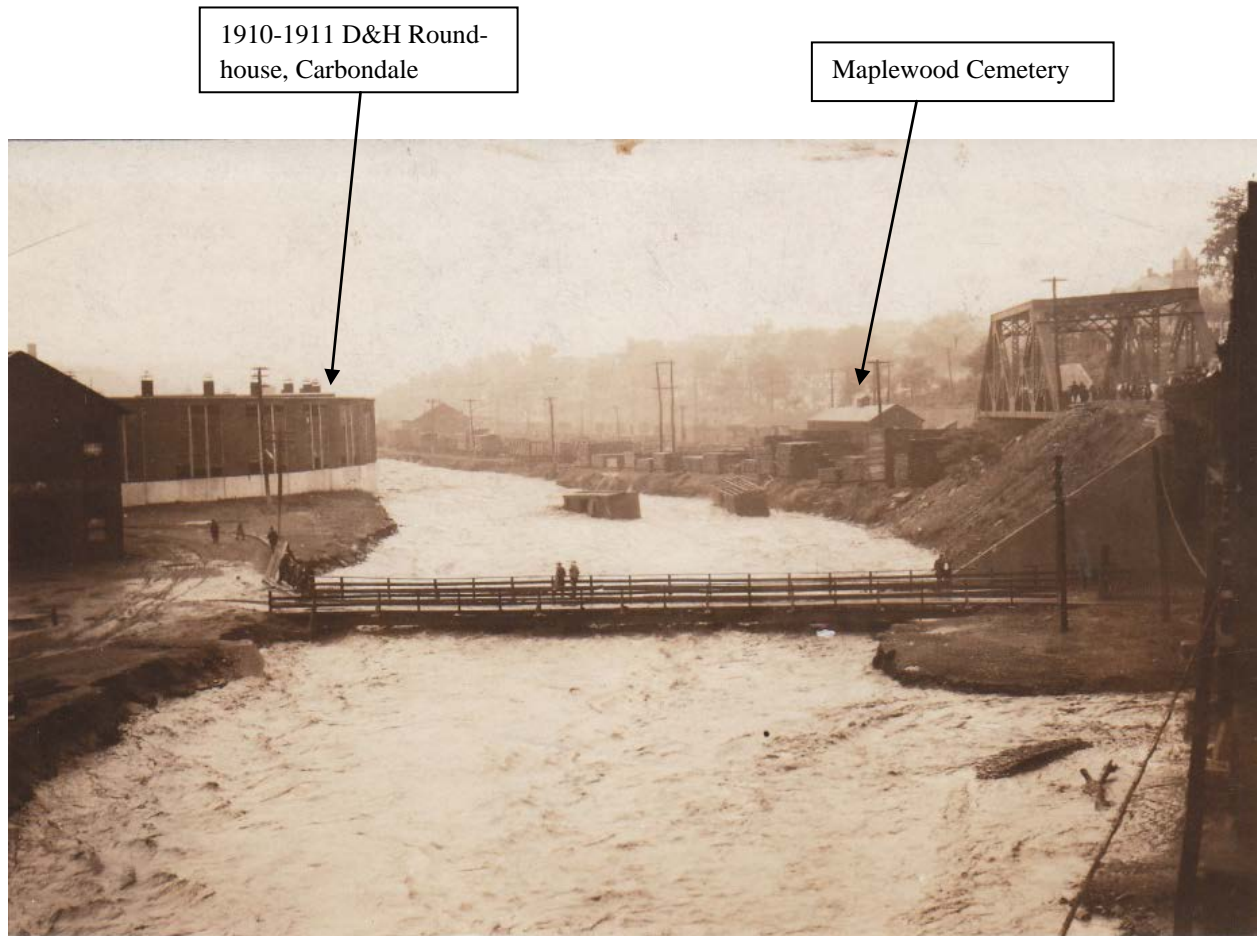




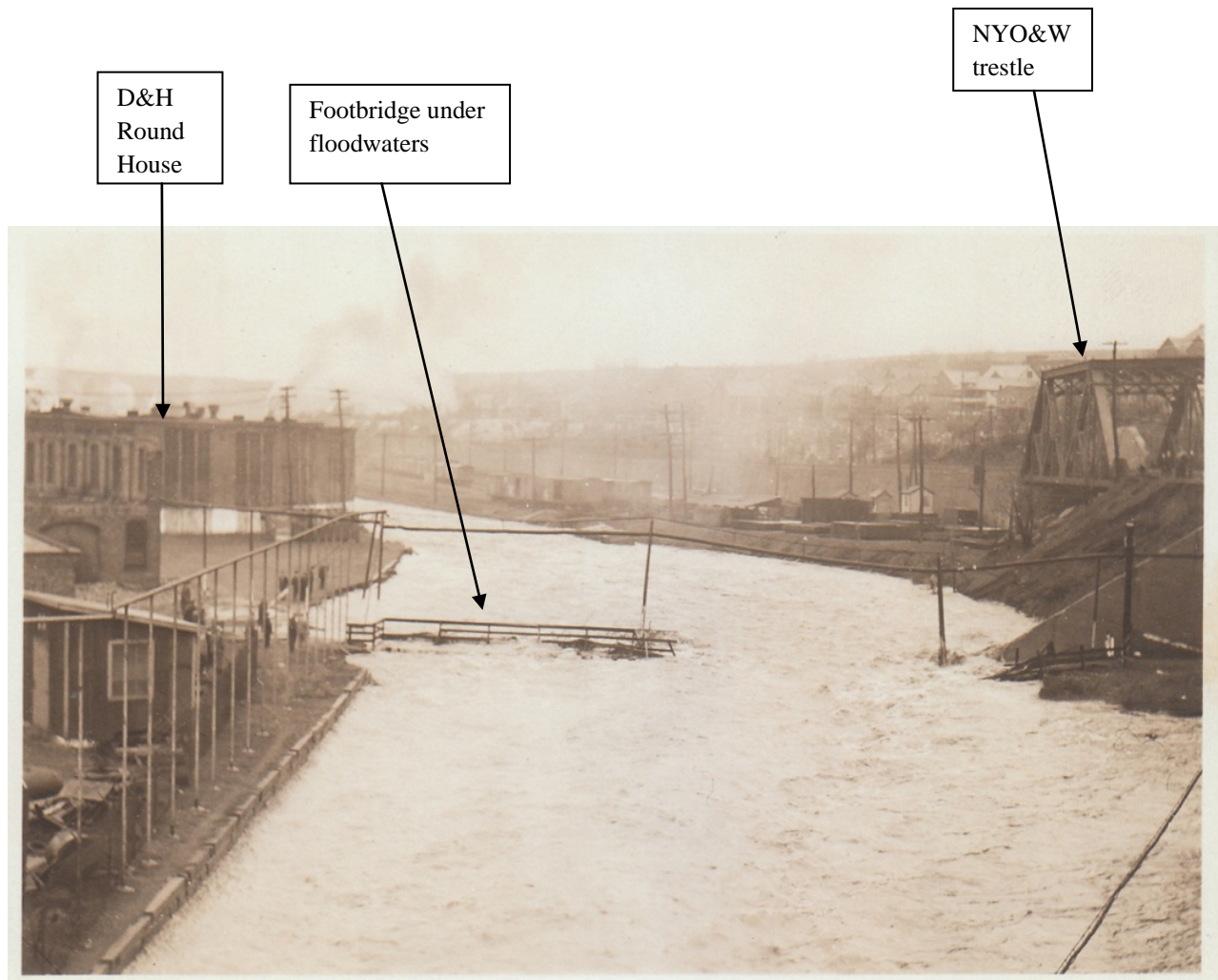
# Transformers on Power



Here are three post card views of the 1910-1911 Carbondale D&H Roundhouse at the time of the flood of 1942 on the Lackawanna River: The originals of these post cards are in the collection of the Carbondale Historical Society and Museum.



1942 Flood:





1942 Flood:

D&H Round House



1944

Here is the Machinist Roster for the Carbondale D&H Motive Power Department, Carbondale Roundhouse, December 15, 1944. This list was donated to the Carbondale Historical Society on October 24, 2015 by Lawrence J. Kelly, 512 Pelican Bay Drive, Daytona Beach, FL 32119. 386-761-3838.

SHEET #1 12/15/44

THE DELAWARE AND HUDSON RAILROAD CORPORATION  
MOTIVE POWER DEPT. PENNA. DIV.  
CARBONDALE, ROUNDHOUSE

MACHINIST ROSTER

NO.	NAME	DATE OF SENIORITY
1.	ARTHUR N. Chabott	Gen. Roundhouse Foreman 11-14-22
2.	Lawrence P. Hirl	Machinist 1-10-23
3.	John F. Mott	Machinist 1-26-23
4.	Acellious A. Foreman	Machinist (Loco. Insp.) 2-6-23
5.	Rexford Evans	Roundhouse Foreman 2-7-23
6.	Eli Krischbaum	Machinist 2-28-23
7.	Rodney D. Brown	Loco. Insp. 2-28-23
8.	George A. Fannin	Gang Foreman 4-16-23
9.	Ernest Booth	Machinist 5-15-23
10.	Chas. A. Schroeder	Machinist 6-4-23
11.	Thomas N. Pappas	Loco. Insp. 6-20-23
12.	John M. Logue	Machinist 6-20-23
13.	Jesse Winters	Machinist 9-8-23
14.	Wm. P. O'Neil	Machinist 12-13-23
15.	John R. O'Neil	Machinist 1-3-24
16.	Daniel G. Morrison	Machinist 1-4-24
17.	Thomas J. Ryan	Roundhouse Foreman 1-16-24
18.	Edw. A. Casey	Machinist (App. Insp.) 1-18-24
19.	Bernard Hogan	Gang Foreman 1-17-24
20.	Wm. Pryal	Gang Foreman 1-18-24
21.	John J. Lintien	Machinist 2-1-24
22.	Francis Gilroy	Machinist 2-2-24
23.	Paul A. Clifford	Machinist (A. B. I.) 2-2-24
24.	Edw. C. Payhe	Valve Setter 2-4-24
25.	Geo. K. Pethick	Machinist 2-5-24
26.	William J. Cook	Machinist 2-9-24
27.	John Fitch	Machinist 2-9-24
28.	John J. Martin	Machinist 2-15-24
29.	Albert C. Doyle	Machinist 3-3-24
30.	Isaac Jones	Machinist 3-19-24
31.	William Klumpp	Loco. Insp. 3-19-24
32.	Arthur G. Seibolt	Welder 5-4-24
33.	Harry B. Smith	Machinist 5-22-24
34.	Henry A. Morgan	Machinist 6-4-24
35.	John J. Yuhas	App. Insp. 6-24-24
36.	Howard G. Murray	Loco. Insp. 7-8-24
37.	Andrew A. J. McAndrew	A. B. I. 7-16-24
38.	Frederick H. Kirwin	Machinist 7-25-24
39.	Paul P. Senio	Machinist 8-16-24
40.	Clayton Gummoe	Machinist 10-9-24
41.	Patrick A. Kenefick	Machinist 11-7-24
42.	Geo. C. Miller	Machinist 1-4-25
43.	Burton C. Crane	Welder 1-27-25
44.	Joseph A. Roulmad	A. B. I. 2-25-25
45.	James T. Enright	Machinist 3-3-25
46.	Richard Armstrong	Machinist 8-4-25
47.	Lawrence L. Kelly	Machinist 8-4-25
48.	Walter J. Fitch	Machinist 12-1-25
49.	Joseph F. McDonald	Machinist 12-7-25
50.	John J. Coggins	Machinist 1-11-26

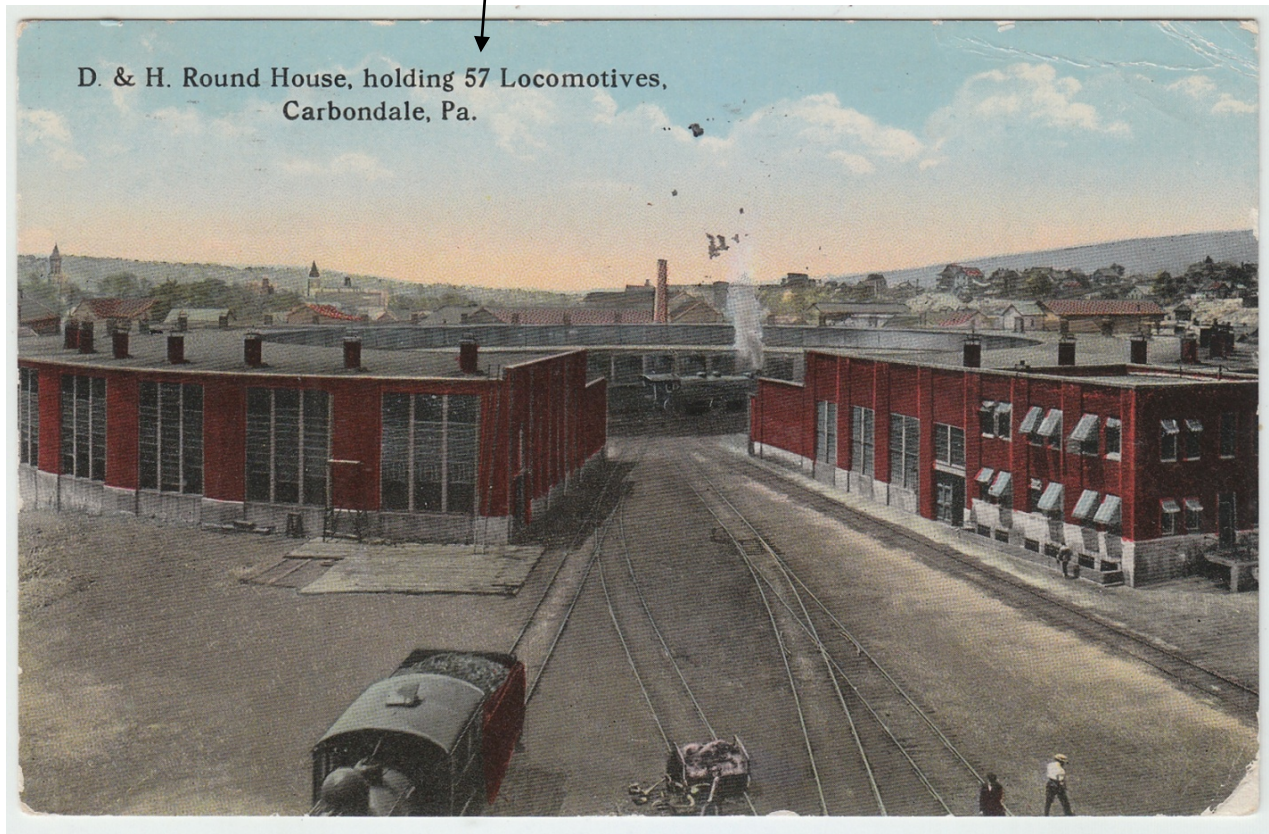
See Volume  
XIV in this  
series, p.88.





Post card view, titled “D. & H. Round House, holding 57 Locomotives, Carbondale, Pa.,” of the 1910-1911 Carbondale D&H Roundhouse, in the collection of the Carbondale D&H Transportation Museum.

This roundhouse had 41 engine stalls, and not 57, as reported in the printed data on the post card.



Anthony Talerico, Carbondale, has a good aerial photograph, taken circa 1950, of this D&H Roundhouse. The photograph was published in the *Carbondale News*, and a copy of the newspaper copy of the photo is in the archives of the Carbondale Historical Society (Carbondale Yard / Roundhouse file folder)

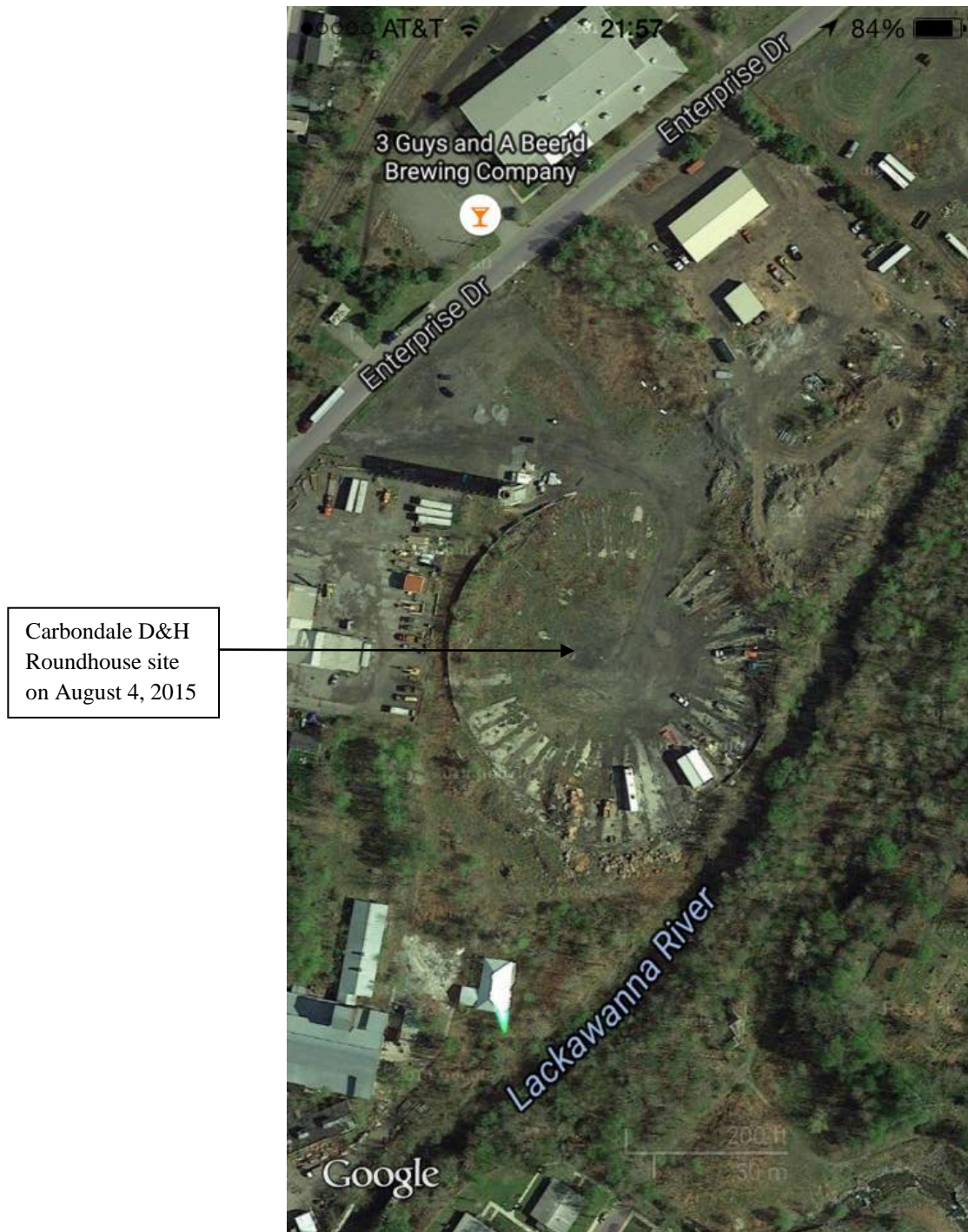
Photograph of a portion of the 1910-1911 Roundhouse after the D&H line through Carbondale was closed down.

This 1910-1911 Carbondale D&H Roundhouse was sold in 1954.





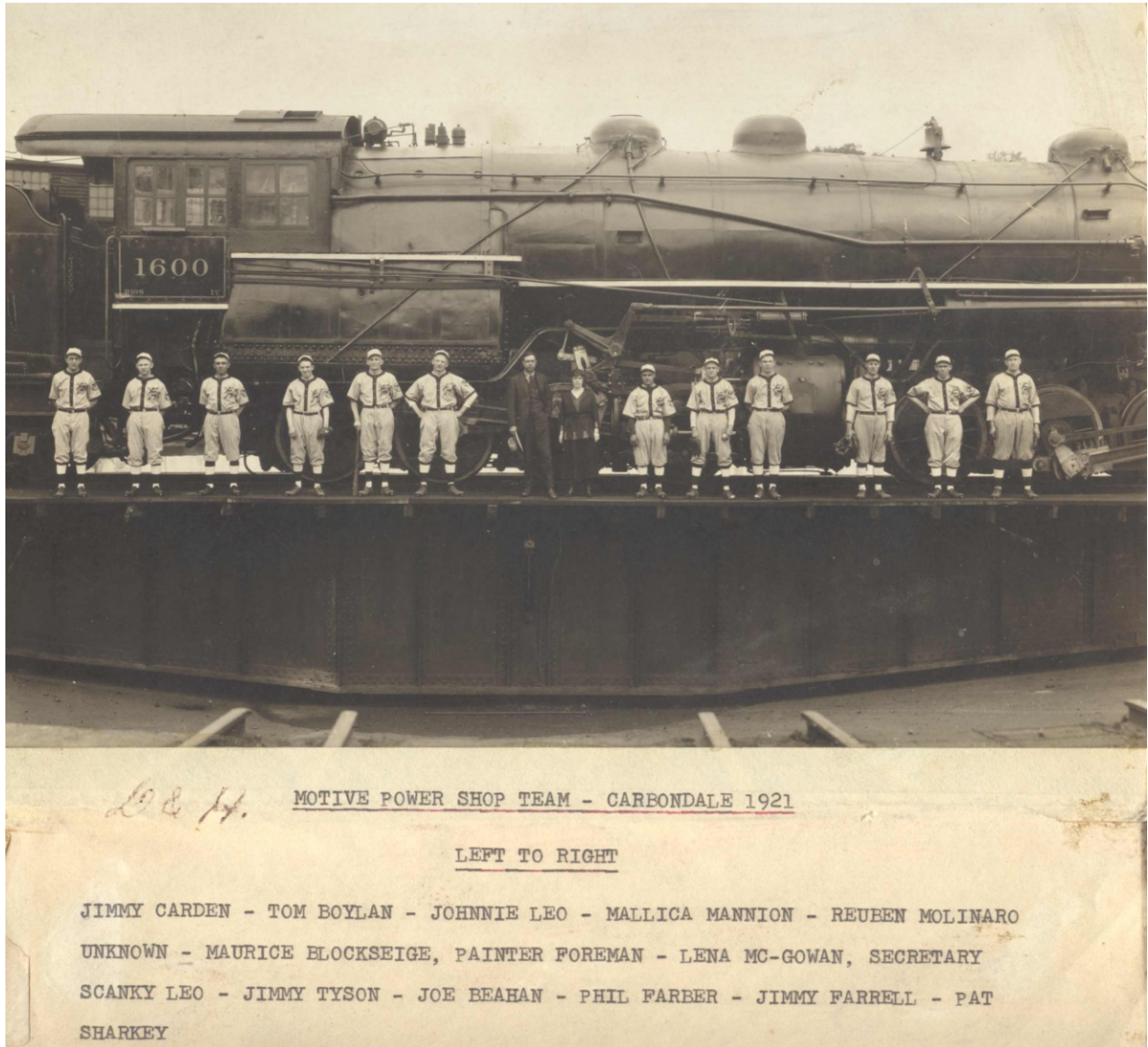
The Carbondale D&H Roundhouse site as seen from space, courtesy of Google Maps, August 4, 2015.





## D&H Baseball

D&H power on the rails, D&H power on the baseball diamond: Here is a photo of the Carbondale D&H motive power shop baseball team, standing in front of D&H No. 1600 on the turntable in the Carbondale Roundhouse in 1921. This extraordinary photograph is in the archives of the Carbondale Historical Society.



The persons shown in this D&H baseball team photo in the collection of the Carbondale Historical Society are, very probably, the same persons that are shown in the photograph on the preceding page. We know for certain that the fifth person from the left in the back row in this photograph is Joseph Beahan (who is seen in the photo on the preceding page, fourth from the right).



One can't help but wonder what became of the great D&H baseball uniforms shown here.

The name of the D&H baseball player in the photograph shown below has not yet been learned. This photograph is in the holdings of the Carbondale Historical Society.





There must have been a vibrant camaraderie among the employees in the Motive Power Department in the Carbondale Roundhouse. Here is a photograph of the D&H Motive Power Department Clam Bake at the Blocksidge Farm in 1923. The original of this photograph is in the holdings of the Carbondale Historical Society.

“Motive Power Dept Clam Bake Blocksidge Farm 1923”



## Colonie Roundhouse and Turntable

By the close of the first decade of the twentieth century, the shop facilities at Carbondale, Oneonta, and Green Island were becoming obsolete and inadequate for the volume of work to be done. So, in 1911, an 1100-acre tract of land was purchased by the D&H at Colonie (about five miles north of Albany, near the city of Watervliet) for vast new shops (with ten acres of floor space) and a terminal, which opened in 1912, at a cost \$2,500,000. Colonie, in fact, replaced the D&H locomotive terminal and repair shop at Green Island, a few miles to the north of Colonie, as well as its coach yard facilities in Albany. The motto of Colonie Shops: "Where Big Things Happen." With the opening of Colonie, the other D&H shops were only used for car building and repair and other lighter work.

At its peak in the early 1920, more than 2,500 people (Shaughnessy says 1600 people) worked at Colonie, a state-of-the-art locomotive shop and a rail facility that included a roundhouse, powerhouse, car shop, planning mill, truck stop, and other structures for the Delaware & Hudson Railway. (Chris McDermott, an engineer who worked there, starting in 1970, says there were at least seven overhead cranes there, as well as complete battery and machine shops.)

This was the main repair location for locomotives on the entire D&H line, from Wilkes-Barre to Montreal, for eighty years. At the time of the closing of Colonie, only minor running repairs were done there. Several important technical advances in railroad mechanical engineering were developed at the facility until it closed in the 1980s. The buildings were empty for about 14 years and then were destroyed by a fire (2005). Colonie had become an eyesore and a public nuisance, prone to vandalism and arson, until much of the complex was demolished in 2004 because of unsafe conditions.

In 2009 Jim Shaughnessy wrote an article on the Colonie shops. On Monday, August 10, 2015, there was a video on Time Warner News, Capital Region (TWCnews.com): *Capital Region Cornerstones: Forgotten Industries of Eastern New York (Colonie Shops)* by Geoff Redick.

When Colonie opened, the roundhouse had 30 stalls. The roundhouse was 379 feet in diameter, with a 20-foot extension on the outer circle over five bays, with this extension housing the equipment necessary for light repairs. A 90-foot turntable served the roundhouse.

On April 30, 1928, the old 90-foot turntable at Colonie was replaced with a 105-foot, twin span table. This 105-feet long table, which was powered by electricity, was 2 ½ feet too short for the Challengers. If a Challenger had to enter the roundhouse, the turntable was used as a bridge just to gain access to a roundhouse stall. To turn a Challenger at Colonie a wye track was used.

From the account given below of the installation of this new turntable that was published in the June 1, 1928 issue of *The Delaware and Hudson Company Bulletin* (pp. 165-167), we learn that "The new turntable is similar to those installed at Oneonta and Carbondale. The mode of

installation was entirely different, however. It is of the non-balance type, distributing its dead and live loads equally between the center and circle rail foundations and with its four equalizing trucks, two at each end, together with the center, making it a five point bearing table. / This construction permits the turning of locomotives when placed on any part of the table, it being unnecessary to balance the load as in the case of the ninety-foot center balanced table which it replaced.”

Here is the complete account of the installation of the turntable at Colonie that was published in the June 1, 1928 issue of *The Delaware and Hudson Company Bulletin*:

"Record Turntable Installation / Old Turntable at Colonie Replaced by More Modern, Non-Balanced Table, in Record Breaking Time; A Feat Our Engineers Are Proud Of," *The Delaware and Hudson Company Bulletin*, June 1, 1928, pp. 165-167





New Turntable Crossing Old Turntable

## *Record Turntable Installation*

*Old Turntable at Colonie Replaced by More Modern, Non-Balanced Table, in Record Breaking Time; A Feat Our Employees Are Proud Of*

**E**XIT the old—enter the new! Such was the order of things Monday morning, April 30, when the old ninety foot turntable at Colonie was replaced by a 105-foot, twin span table. Moreover, those who accomplished the feat may well point with pride to the fact that the installation was made in record-breaking time. When, in 1924, the turntable at Oneonta was installed in seven hours and thirty-eight minutes; and in 1926 when the old table at Carbondale was replaced in four hours and four minutes, our forces were indeed proud. The elapsed time from the time the power was shut off at Colonie on the above date until the first revolution of the new turntable was complete was only two hours and thirty-three minutes.

The true significance of this accomplishment can only be appreciated when we realize that a roundhouse without a turntable in operation is useless. Locomotives in the roundhouse cannot be removed; neither can those outside be admitted for attention. For this reason all possible preliminary work is completed before the current is turned off on the old table. Fortunately there was sufficient space at Colonie to permit the erection of the table so that it could be installed in

one piece and this may account, in part for the short time elapsed in the installation. We should not, however, detract from the distinction due those who made this low time possible.

The new turntable is similar to those installed at Oneonta and Carbondale. The mode of installation was entirely different, however. It is of the non-balance type, distributing its dead and live loads equally between the center and circle rail foundations and with its four equalizing trucks, two at each end, together with the center, making it a five point bearing table.

This construction permits the turning of locomotives when placed on any part of the table, it being unnecessary to balance the load as in the case of the ninety foot center balanced table which it replaced.

Preliminary work carried out under traffic conditions consisted of excavating for, and constructing the new ring wall and circle track, supporting the engine house tracks between the new and old ring walls and its replacement with temporary cribbing, construction of the electric power line.

At 7:44 A. M. power was turned off on the old table. Immediately the new table was pushed



Placing Center Block

across the old table by yard engine 21. It was then picked up at one end by Oneonta wrecking crane and at the other by the bridge erecting crane and set to one side on temporary blocking. The old table was then picked up at one end by the Oneonta wrecking crane and at the other by the bridge erecting crane and turned over to the Colonie wrecking crane which loaded it on a flat car located in a stall in the roundhouse.

In the meantime the bridge erecting crane had picked up and located the huge reinforced concrete center block and the center bearing. The new table was again picked up by the Oneonta wrecking outfit and bridge erecting crane and placed in position on the end trucks which had previously

been placed in the pit. The table was then seated, power turned on and the first revolution completed at 10:17 A. M.

Despite the threatening rain and an occasional sprinkle, the entire circular pit was lined with spectators, who took in every detail of the work. Locomotive number 21, a tiny switching engine steamed on the old table shortly after 8 A. M. and when it backed off, a few minutes later, the last locomotive to cross the old table, another item was written in the history of The Delaware and Hudson Company. When, at last, the new table was in position, and the last bit of temporary cribbing had been removed and the pit thoroughly cleaned,



Removing Old Turntable



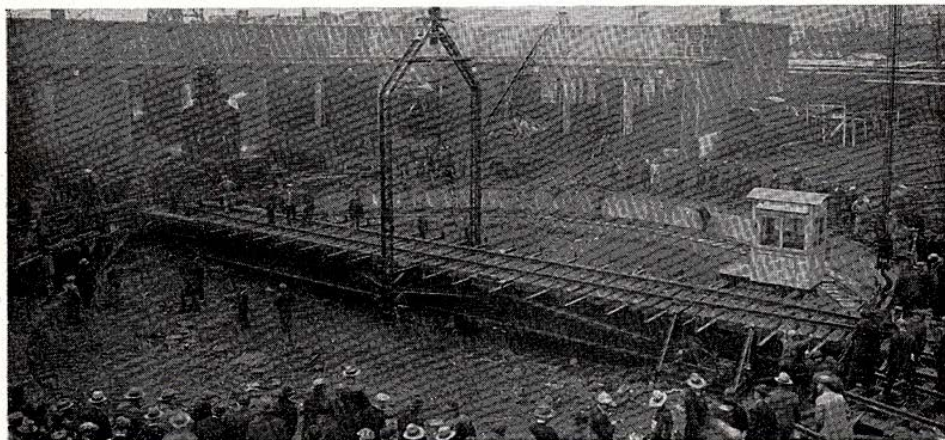
locomotive number 600, pride of our passenger fleet, with FOREMAN HOSTLER FRAWLEY at the throttle, steamed on the turntable to be the first to be accommodated by the new facility, a cheer arose from the spectators.

So the march of events moves onward. What

today is the latest word in any mechanical line, tomorrow may be replaced and thrown into the discard to be replaced by a more modern device. Everyone is rightfully proud of the new turntable at Colonie. It will take care of our largest locomotives with dispatch.

### *High Spots of Installation*

Power turned off	7.44	New turntable picked up	8.10
Old turntable removed	8.34	" " placed along side	
	9.15	old table	8.34
	0.41 min.		24 min.
Precast block picked up	8.54	New turntable picked up and	
" " to elevation	9.04	put in position	9.27
	10 min.	New turntable in place	10.10
1/2" cement motor	8.50		43 min.
	8.54		
	04 min.	Cribbing removed	9.54
Center bearing to line and center	9.15	Pit cleaned	10.14
" " " " " "		First revolution of table	10.15
completed	9.26	End of complete revolution	10.17
	11 min.	Total elapsed time of installation	2.33 min.



Turntable Moving Under Its Own Power

### **Truscott/Barrett Article on Colonie**

Tim Truscott and Dick Barrett wrote what surely must be the definitive article on the Colonie Shops, and we are all indebted to them for their fine work and for having published their research for the record. Their article, titled "The Delaware & Hudson's Colonie Shops," was published in "The Call Board," the *Newsletter of the Mohawk & Hudson Chapter, N.R.H.S.*, January 1991, pp. 8-13 Here is that extraordinary article:



# The Delaware & Hudson's Colonie Shops

By Tim Truscott and  
Dick Barrett

Between the turn of the century and the beginning of the Great Depression in 1929, the railroad industry in the northeastern United States was at its zenith. Many of the Class I railroads, such as the Delaware & Hudson, were amassing great wealth from the huge amount of traffic that they were carrying. After all, railroads were the fastest and most efficient way to carry people and goods at that time. The nation's highway system, which came to be an alternative to the railroads, had not yet developed. The railroads were also the chief conveyor of the nation's primary energy source, coal.

The railroad industry's wealth allowed it to meet the demand for new facilities, the demand for which was brought about by the changing railroad technology of larger locomotives and other equipment and by the increase in the numbers of pieces of equipment needed for railroad operations. On the Delaware & Hudson, this change in railroad technology and the increase in business and the wealth derived from that business resulted in a number of major modernization projects in its physical plant:

The Oneonta roundhouse, the largest in the world at the time, was built in 1906.

A 40-stall roundhouse in Carbondale and a 10-stall enginehouse and engine terminal in Binghamton were opened in 1911.

In 1911 a 37-mile grade-reduction project was undertaken between Ninevah Junction and Oneonta.

The D&H Building, the headquarters for the railroad in downtown Albany which was unmatched for its size and architectural beauty, was built in 1914-15.

The compensated grade line, extending along the south side of the valley between Schenevus and Richmondville Summit above East Worcester, was completed in 1921 and facilitated the movement of northbound traffic up the south side of Richmondville Hill.

In 1911 and 1912, when it was in its peak period of expansion and modernization, the Delaware & Hudson Railroad constructed a new mechanical facility and freight yard in the Town of Colonie adjacent to Watervliet, New York, approxi-

mately five miles north of Albany. The new Colonie facility, constructed at a cost of approximately \$2 million dollars, was the largest railroad mechanical facility in New York State at the time and was said to be equal to any in the eastern United States.

Colonie replaced the railroad's locomotive terminal and repair shop at Green Island, just a couple of miles further north from the Colonie site, as well as its coach yard facilities in Albany. In fact, Colonie also replaced older facilities for heavy mechanical work at Carbondale and Oneonta, which were inadequate for the size of locomotives and volume of work required at the time.

The basic design philosophy for Colonie was to utilize the good functional design features of the leading shops around the country rather than to seek an architectural effect. Two of the chief design criteria were

to provide good ventilation and as much light as possible. While the largest of the Delaware & Hudson's locomotives were working on the southern end of the railroad at this time, the Colonie facilities were designed with the possibility in mind that these large locomotives might be used on the northern end of the line in the future.

Unlike the New York Central's West Albany Shop complex, which evolved through a series of stages of construction and redevelopment beginning in the 1850s, the Delaware & Hudson's Colonie mechanical plant was constructed as an entirely new facility where there were no previous railroad structures.

The Colonie project was under the immediate supervision of Mr. V. Z. Caracristi, Consulting Engineer of the Delaware & Hudson. Its size and modern design were

The 1910 - 1911 Carbondale Roundhouse was also built under the direction of V. Z. Caracristi.



An aerial view from the south of the Delaware & Hudson's Colonie Shop complex. Note the roundhouse and smoke stack of the power house at the center of the photo, as well as the locomotive shop at the right (the large building above the locomotive shop is the Watervliet Arsenal). To the left of the roundhouse is car shop, planing mill and truck shop. The mainline extends diagonally to left of center. Partially concealed by the smoke from the roundhouse are the coal trestle and ash pits. The date of the photo is unknown. (Collection of the authors)

equal to any other in the east at the time.

The Colonie facility was constructed with a north-south orientation on a 160-acre tract of land, and comprised a general locomotive repair shop (including a main shop, foundry and hammer shop), a locomotive repair terminal (including a roundhouse with the necessary facilities for coal-ing, watering and storing steam locomotives), a large coach yard (in which passenger cars were cleaned and classified), a freight car receiving yard and repair shop, a paint shop, and a stores department. All of the buildings were constructed with their long dimension on a north-south orientation and designed so that they could be expanded in the future, if necessary, without interfering with one another. Of particular interest, the locomotive shop and the car shop were provided with expansion potentials of at least 50 percent, while the roundhouse could be expanded by 11 or 12 stalls (over 30%).

Outdoor craneways served the principle buildings within the facility and were situated on either a north-south or east-west axis. Some of these craneways were equipped with more than one crane. The purpose of these craneways was to provide for the efficient movement of materials

between buildings and between outdoor locations, as well as into and out of the buildings. A high-speed craneway, with a span of 67 1/2 ft. and a capacity of 5 tons, ran in an east-west direction on the north side of the car shop all the way to the eastern edge of the property, a distance of 1,162 ft. This craneway tied the entire Colonie facility together. Another craneway with a 100-ft. span and a capacity of 10 tons ran in an north-south direction and separated the locomotive shop from the foundry and stores building. A third crane, 450 ft. long with an 85-ft. span and a 5-ton capacity, served as a yard crane south of the planing mill for the purpose of moving lumber in the stockpile.

The locomotive shop, located on the east side of the property, was by far the largest building constructed in the Colonie complex. With a north-south dimension of 510 ft. and an east-west dimension of 387 ft., it housed all units of the locomotive department except the hammer shop and foundry. The building consisted of seven bays across its 387 ft. width, with the center bay (transfer bay) and the two bays adjoining the center bay (erecting bays) on each side being 69 ft. wide, while the side bays were 59 ft. wide and the outside bays were

30 ft. in width. The outside bays had second story "galleries" (more recently referred to by D&H personnel as "balconies") along the outside walls.

Steam locomotives brought into the shop for overhaul entered the building on one of two tracks through doors near the middle of the west side of the building. Engines were de-greased with hot water under pressure on a washing table just outside the building before entering. This arrangement replaced the use of lye vats for de-greasing, which had been the customary method, and was safer and more economical.

Unlike most locomotive shops of the period, the Delaware & Hudson's Colonie Shop used a 150-ton capacity Shaw electric crane to position steam engines within the shop, rather than the customary transfer table and pit. This procedure provided an economy of space so that other functions could be performed within the building.

The 150-ton, 65-ft. span transfer crane would lift a steam engine and place it in an east-west position over a pit in the center bay (transfer bay) in the north half of the shop, where it was to be stripped. Shop trucks were placed under the engine after it was stripped, and the engine moved either east or west into one of the two erecting bays (one erecting bay on either side of the transfer bay) by means of an electric winch.

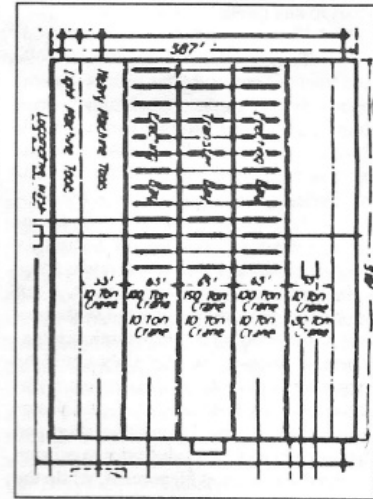
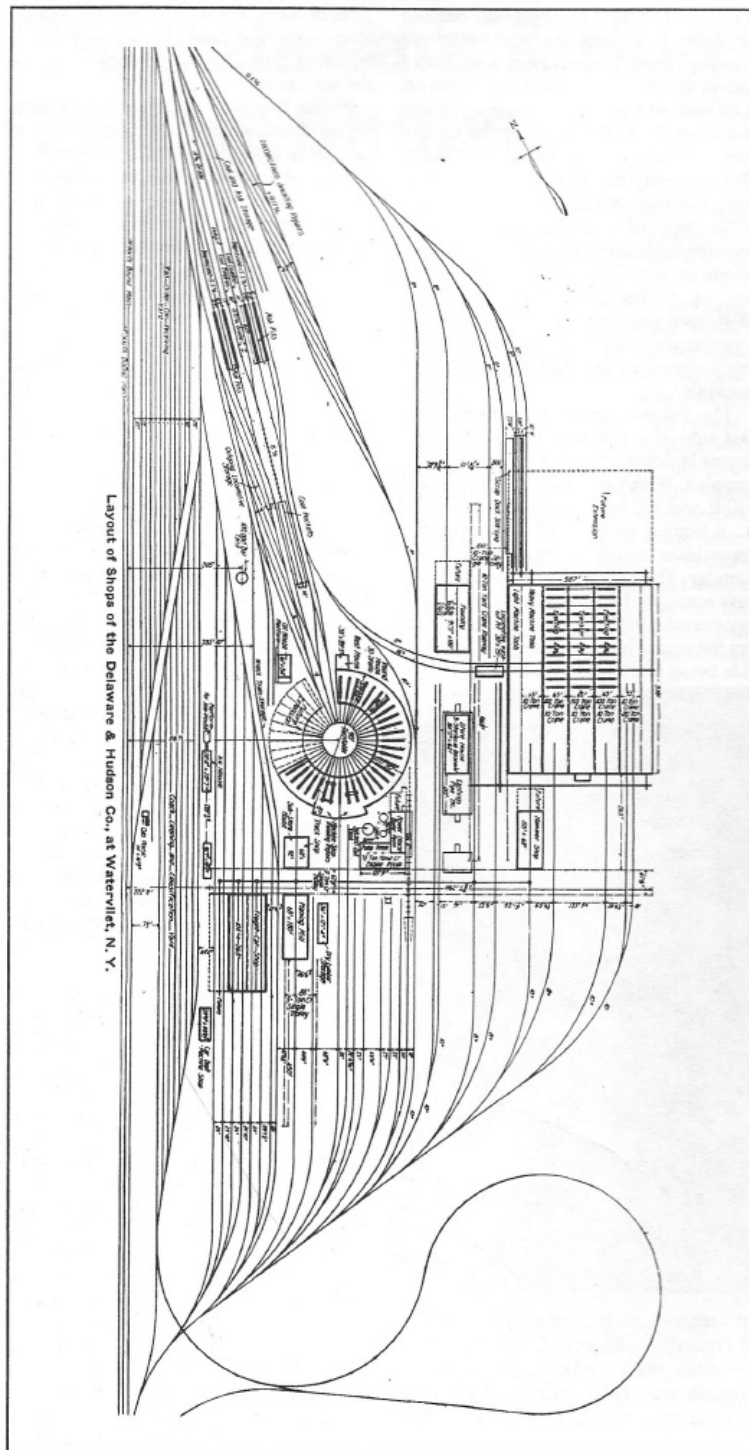
The erecting bays each had 12 pits, while the transfer bay had a total of seven pits. Two of the pits in the transfer bay were in incoming and outgoing tracks, while the remaining five pits in this bay were situated in alternating tracks of the other ten track positions of this bay. Each of the erecting bays was equipped with a 100-ton capacity Shaw overhead electric crane which had a 65-ft. span.

When the engine was stripped in the transfer bay, the parts which required repair were transported from the transfer bay to their respective departments while the remaining parts not needing repair were stored in the transfer bay until they were needed for re-assembly (erecting).

Under the east gallery in the south end of the building was a small work smith shop. The south end of the transfer and erecting bays was used as a boiler shop, while a portion of the easterly bay served as a tender shop. Each of the bays in the south end was served by 10-ton Shaw overhead electric cranes. Heavy machine work was performed in the north end and central portion of the two 59-ft. bays, which were served by 10-ton and 30-ton cranes. Light machine work was performed on both the ground floor and the gallery level of the



An aerial view from the north of the Delaware & Hudson's Colonie Shop complex. At center is the 30-stall roundhouse with the locomotive shop to the left of it. To the right of the roundhouse is the truck shop, planing mill and car shop. The mainline extends diagonally to the right of the roundhouse. The date of the photo is unknown. (Collection of the authors)



An enlarged schematic of the Colonie locomotive shop showing the transfer bay at center with the erecting bays on either side. Adjacent to the erecting bays were the machine shops, with galleries over the outermost bays. (Collection of the authors)

outside bays, with the ground floor handling the rods, pistons, valves and associated parts, while the galleries contained the manufacturing tool room, brass room, electric room, paint shop, cab shop, tin shop, etc. Overhead cranes in the 59-ft. machine bays served the galleries by means of platforms projecting 9 ft. from the galleries at intervals.

The foundry measured 91 ft. by 180 ft. and was located west of the main locomotive shop. The foundry building was connected with the main shop by means of industrial tracks. The main bay of the foundry building, which was 60 ft. wide,

A schematic of the Delaware & Hudson's Colonie Shop complex as it was built in 1911-1912. Note the 30-stall roundhouse at center and locomotive shop to the right. To the left of center (west) and below the roundhouse is the truck shop, planing mill and car shop. Also note the loop track at lower right, as well as the coal trestle and ash pits above (north of) the roundhouse. (Collection of the authors)



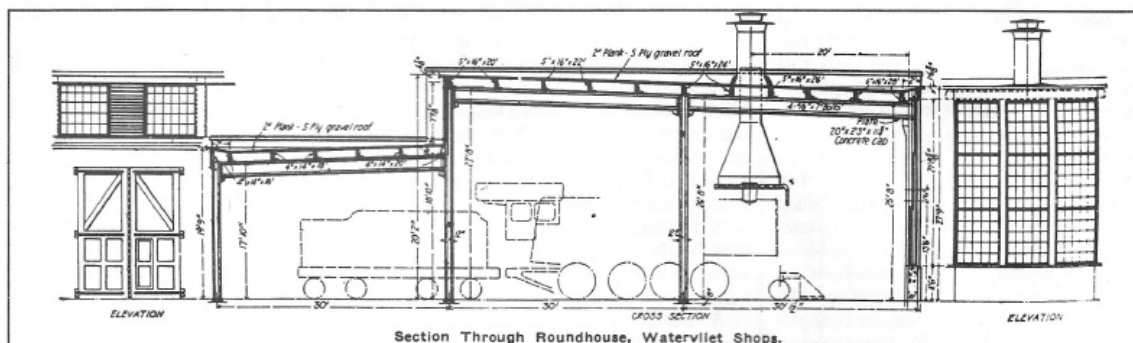
The 30-stall roundhouse was 379 feet in diameter with a 20-foot extension on the outer circle over five bays, with this extension housing the equipment necessary for light repairs. A 90-foot turntable served the roundhouse, as did the facilities for coaling, watering and storing, along with oil supply, water supply and ash pits. The roundhouse was 90 feet between its inner and outer

North of the roundhouse were located coal pockets for fueling steam locomotives, while further north four concrete ash pits each 160 feet long were arranged in pairs with a depressed ash track between the two pits of each pair. Between the two pairs of ash pits were the tracks for coal pockets with one for the loaded cars and one for the empties. Cars were hauled up the coal trestle by means of a Fairbanks-Morse electric hoist and emptied into pockets with a capacity of 600 tons. The pockets had air operated automatic gravity measuring chutes of two- and four-ton capacity. Sand storage, as well as sand drying and handling equipment, was lo-

The car department included additional facilities. A small machine and blacksmith



A section through the Delaware & Hudson's Colonie locomotive shop as it was built in 1911-1912. Note the transfer bay at the center, with an erecting bay on either side. The machine shops were located adjacent to the erecting bays. (Collection of the authors)



A section through the Delaware & Hudson's Colonie roundhouse as it was built in 1911-1912. Note the smoke jack over the engine's stack. To the left is shown an elevation of the doors and clerestory facing the turntable. To the right is shown an elevation of the outside of the building with its large windows. (Collection of the authors)

shop southwest of the car repair shop, measuring 22 ft. by 88 ft., was available for performance of light work. The planing mill building measured 68 ft. by 180 ft. and had a track extending through its entire length. Lumber was stored to the south of the planing mill in an area served by a 5-ton crane. North of the planing mill, on the opposite side of the craneway, was the truck shop. In the north end of the facility was the "bad order" car receiving yard with a capacity of more than 300 cars.

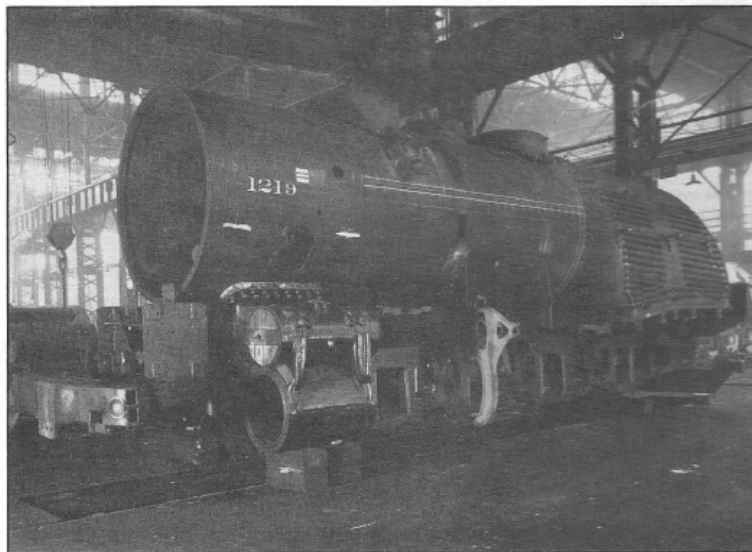
The stores department building was constructed at a central location relative to the main locomotive shop and the roundhouse. A 100-ft. craneway ran along the east side of the building, separating this building from the main shop. The stores department, occupying three-stories plus basement and measuring 62 ft. by 162 ft., was designed to serve as the mechanical storehouse for the entire northern division and as stationary storehouse for the whole railroad. A portion of the second story was

divided into offices for the superintendent of shops and his staff, as well as an apprentice instruction room. (At that time, the D&H had a complete system of instruction for apprentices consisting of an elementary course in arithmetic, drawing and other courses which were compulsory.)

An electric elevator with 3,000 lbs. capacity moved materials within the building, while the overhead crane on the 100-ft. craneway running between the stores building and the main shop was available to move materials on platforms on the east and south side of the building. Loading platforms surrounded the building, with tracks running parallel to and in close proximity to all of these. An industrial track connected the main shop with the stores building.

The power house, which was located just south of the roundhouse, was an L-shaped building 156 ft. by 121 ft. with a boiler room 41 ft. wide and an engine and pump room 80 ft. wide. While the principal electric power source for Colonie was the Delaware & Hudson's Mechanicville steam power station, built principally for the company's electric lines, a 350 kilowatt DC reciprocating steam generating set was included in the Colonie power house. The electric power from Mechanicville was delivered as 40-cycle, 11,000-volt AC current and transformed into 240-volt AC. A motor-generator set also converted AC power to 240 volts DC for operating some of the machinery such as the overhead cranes. There was also a steam powered air compressor with a capacity of 2,000 cu. ft. per min., as well as an electric motor drive air compressor of 2,000 cfm capacity.

Heat for the Colonie facility was sup-



The new all-welded boiler and frame of D&H Class E-6a 2-8-0 No. 1219 being reassembled in one of the erecting bays of the locomotive shop at Colonie in May of 1937. The 1219 was built by the American Locomotive Company in Schenectady in 1918. (Collection of the authors)

plied by six large boilers in the power house which burned bird's-eye coal under forced drafts provided by two 8 ft. fans. A concrete smoke stack was 210 ft. high and 7 ft. in diameter. All of the buildings with the exception of the stores building, the roundhouse and the truck shop, were heated by indirect radiation, i.e. the heating coils and motor driven fans were located in the clerestory bays of the buildings and ductwork conveyed the hot air down to the floor levels. The roundhouse, truck shop and stores building were all heated by direct radiation.

The Delaware & Hudson's Colonie facility was the result of D&H President L. F. Loree's desire to have the most modern facility possible. Loree, a civil engineer by training, was said to have played a direct role in planning the new facility, which was undoubtedly "state-of-the-art" for the time.

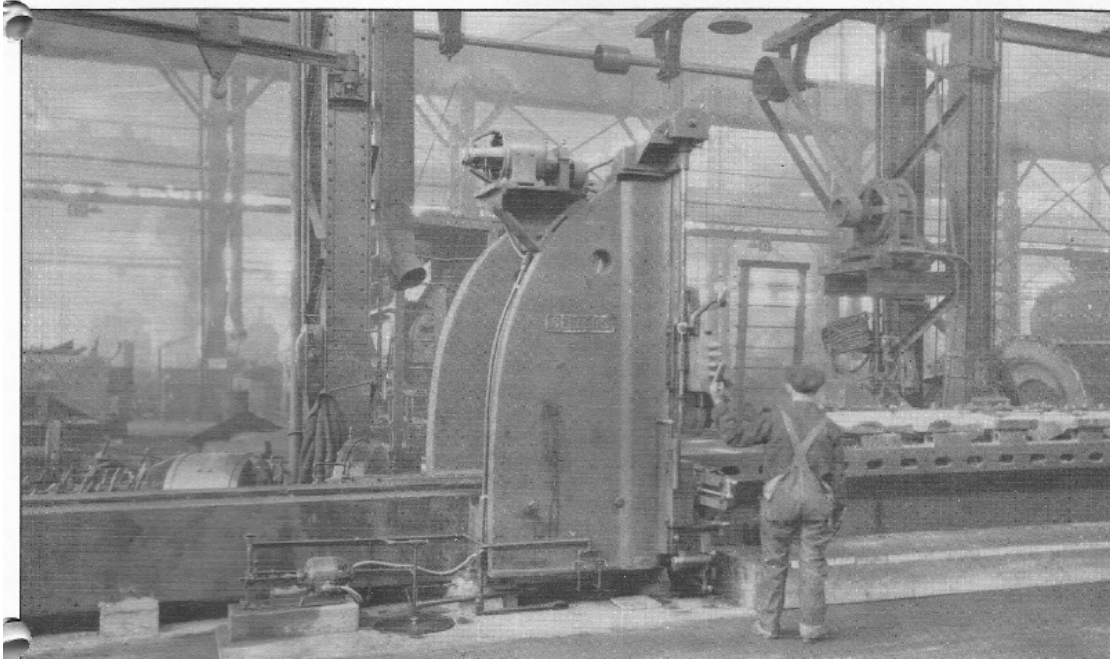
#### References

"Watervliet Terminal, Delaware & Hudson Co.," in *Railway Engineering and Maintenance of Way*, December 1912.

"Construction Features of the Watervliet Shops of the Delaware & Hudson Company," in *Cassier's Magazine: An Engineering Monthly*, May 1912.



Delaware & Hudson Class E-5 2-8-0 No. 1056 in the Colonie roundhouse on May 22, 1917. Note the smoke jacks in the upper right of the photograph, as well as the pits between the tracks. The Colonie roundhouse had 30 stalls and was built with a 90-ft. turntable. (Collection of the authors)



The heavy machine shop bay on west side of the D&H Colonie locomotive shop in about 1925. (D&H Collection, New York State Library)



While we're at Colonie, it is well to take a look at the D&H passenger and freight stations at Colonie and Watervliet. The photograph of the D&H Colonie shelter, built 1912-1913, that is given below is from *Passenger and Freight Stations Delaware & Hudson. The Delaware and Hudson Company / Board Of Managers / Inspection of Lines : : June 7<sup>th</sup> to June 10th, 1928*, p. 171.



The photographs of the D&H Watervliet passenger stations (183, 1874, and 1889-1890) and freight house (1902) that are show below are from *Passenger and Freight Stations Delaware & Hudson. The Delaware and Hudson Company / Board Of Managers / Inspection of Lines : : . June 7<sup>th</sup> to June 10th, 1928*, p. 173.

## Watervliet, N. Y.



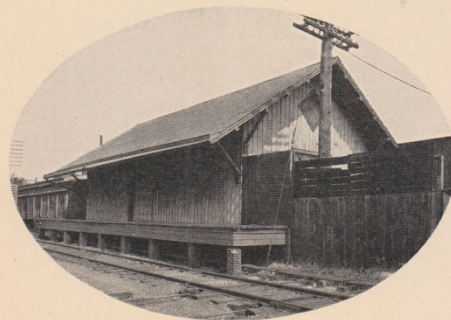
PASSENGER STATION  
BUILT IN 1853

Located on 19th Street almost opposite present station, and is now occupied as a four family dwelling house.

The 2nd Passenger Station built in 1874 and dismantled in 1889 was located in front of the original station.



PASSENGER STATION  
BUILT IN 1889-1890



FREIGHT HOUSE  
BUILT IN 1902

Never occupied, leased to J. T. Young in 1923

## **Green Island Shops**

Green Island is located at the confluence of the Mohawk and Hudson Rivers due west of the city of Troy. It was connected both to Troy and to more islands at the north of Waterford by bridges constructed in 1835 by the Rensselaer and Saratoga Railroad Company.

In 1834 a terminal was built on Green Island by the Rensselaer and Saratoga Railroad, which the following year built the first Green Island Bridge for railroad use from Green Island to Troy. The Rensselaer and Saratoga Railroad built its locomotive and car shops in 1842 in Green Island. LeGrand B. Cannon, who owned much of Green Island, was active in the management of the R&S. In December 1868, the railroad purchased more than 21 acres of the north central portion of the island from Cannon as a site for extensive locomotive repair and car-building and repair shops.

On May 1, 1871, the D&H leased the Rensselaer and Saratoga Railroad (which was merged into D&H on July 2, 1945).

The Delaware & Hudson soon launched an ambitious expansion program, only slightly curtailed by the Panic of 1873. Heavy repairs and rebuilding of steam locomotives were carried on there, with this type of work for the railroad's tri-state system being equally divided among shops at Green Island, Oneonta, and Carbondale.



# Green Island

South branch  
of Mohawk  
River

Erie Canal

Rensselaer & Saratoga Shops /  
D. & H. C. Co.'s Shops, on  
Cannon Street, Green Island

**Green Island:** Island  
between the South  
Branch of the Mohawk  
River and the Hudson  
River at Troy, NY.

Hay Island

Green Island  
Bridge across the  
Hudson River

Centre Island

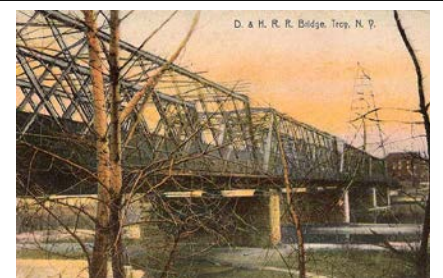
Hudson River

The Troy & Schenectady Railway Co. shared the Green Island Bridge from Troy to Green Island with the D&H., although the D&H owned it. Even in the early days, the Troy & Schenectady railroad used the bridge of D&H predecessor, the Rensselaer & Saratoga, to cross the Hudson River.

Green Island  
Bridge



(Photo: NEB&W)



Green Island Bridge

Begun in 1871, the Rensselaer & Saratoga's Green Island Shops were completed the following year. The shops were located on the west side of the D&H tracks, 500 feet north of Tibbitts Avenue in the city of Green Island (County of Albany).



*Rensselaer & Saratoga Railroad Green Island Shops, Green Island New York.* Downloaded from Internet, August 10, 2015.



*Delaware & Hudson Machine Shops and Round House. Green Island, N. Y.* Post card in the collection of the Carbondale D&H Transportation Museum, courtesy John V. Buberniak, April 18, 2016.



Reverse of the above post card:





The shops, as they are shown on the *Sanborn Insurance Map of 1875*, consisted of three separate brick buildings extending northward along the Rensselaer & Saratoga's Troy to Waterford line.

First was the main Machine Shop, with office at the center on the east side. The large (32 feet to the eaves) southern section housed the five-bay locomotive shop on the first floor. The second story was used for wood work and pattern storage. The central section (18 feet to the eaves) was devoted to machinery, with the blacksmith shop at the north end.

Immediately west of this building were a 50-foot, brick-enclosed water tank of 51,819-gallon capacity, a stone cistern, a boiler room with two boilers totaling 175 horsepower and a 110 horsepower engine, capped by a 120 foot chimney, and various sheds.

Southwest of the main building was a turntable, serving an eight-stall roundhouse, built in the form of a segment of concentric circles, with a single sloped roof.

To the northwest stood the Paint Shop, which was twenty feet to the eaves and contained as well the boiler shop and storage for hardware. Other nearby buildings included a two-story sand shed; a combined oil, varnish and waste room; and a large frame, circular privy.

The next principal building was the car shops, located next to an old roundhouse north along the track side. (In 1876, a disastrous fire leveled the great roundhouse, originally built by the Rutland & Washington Railroad.) A one-story section used for sawing and planing came first, and then a two-story erecting shop, with sawing and turning on the second floor and storage in the loft under the roof. This section apparently was similar in character to the existing locomotive shop.

A third one-story building, 230 feet long, stood approximately 450 feet further north. This was the car storehouse. Adjacent to this on the east were various lumber sheds, storage for castings, and a coal pile.

The shops were heated by stoves mounted on brick and iron bases and burning wood shavings and coal. Light was furnished by kerosene lamps. A work force of 75 to 125 men worked six days a week, with three night watchmen and one Sunday watchman.

According to the data on the Sanborn map, the three-story, five-bay locomotive shop and machine-forge shop were originally separate. They were later connected with the one-story section of the former car shop. The connection was made between 1885 and 1903. Adjacent were the wooden roundhouse, brick water-tower base, boiler room, etc. The paint shop of 1872 burned on 23 January 1904 and its site is occupied today by a more recent structure used for storage.

The shops and service complex were unharmed and continued in use until 1912, when the D&H built a large service complex in Colonie, near Albany, and the D&H locomotive shop at Green Island was moved, in 1913, to Colonie, and all D&H locomotive building and repair was concentrated at the new D&H shops at Colonie. The Green Island plant continued in operation, however, into the late 1930s, devoted to the building of the D&H's wooden freight cars, as well as repair and light work on other freight equipment.

For forty years the Green Island Shops were a scene of much activity, and the majority of the D&H's locomotives were, at one time or another; looked after there, the jobs ranging from simple repairs or paint to major overhaul and redesign. Even after the Delaware and Hudson Railroad took over and consolidated operations to the Colonie Shops (just west of Watervliet), the Green Island Shops continued to be a repair shop and were frequently mentioned in trade magazines during the 1930s regarding their experiments with new methods and materials (such as light weight steel).

Portions of the property were sold for industrial and private use in 1940. Since that period, the remaining buildings have stood idle or have been used for storage purposes. The shops burned in 2011.

Passenger stations (1873, 1890) and freight houses (1875, 1913) at Green Island, NY. The photographs of the Green Island D&H passenger stations and freight houses shown below are from *Passenger and Freight Stations Delaware & Hudson. The Delaware and Hudson Company / Board Of Managers / Inspection of Lines : : June 7<sup>th</sup> to June 10th, 1928*, p. 175.

**Green Island:**

Formerly named "Tibbitts Island," in 1835 it was called Green Island by LeGrand Cannon, who then became one of its owners. The village of Green Island was incorporated on April 5, 1853.

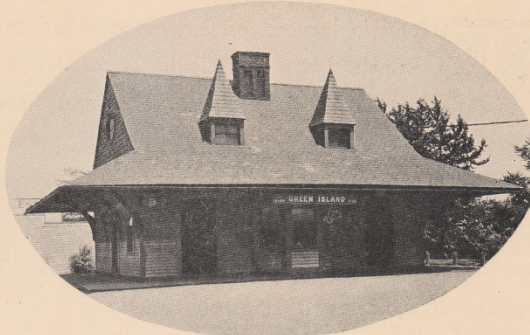
**Green Island, N. Y.**



PASSENGER STATION  
BUILT IN 1873

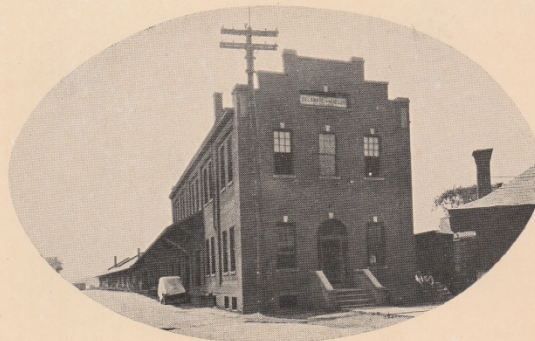
It stood on the present station site Moved to Hamilton Street and converted into dwelling house in 1890.

Original Passenger Station was built about 1835.



PASSENGER STATION  
BUILT IN 1890

FREIGHT HOUSE  
BUILT IN 1875



FREIGHT OFFICE AND HOUSE  
1913 an addition and freigh office was built.



The photos of the D&H Troy stations shown below are from *Passenger and Freight Stations Delaware & Hudson. The Delaware and Hudson Company / Board Of Managers / Inspection of Lines : : June 7<sup>th</sup> to June 10th, 1928, p. 177.*

## Troy, N. Y.

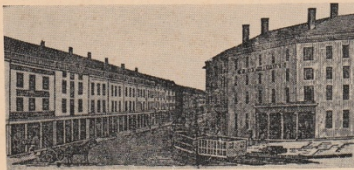


VIEW OF TROY, SHOWING ORIGINAL  
RENSSELAER AND SARATOGA BRIDGE

### "FIRST TROY UNION DEPOT"

The inconvenience attending the running of the freight and passenger cars of the different railroad companies on River Street, especially in the use of horses for drawing the cars from one point to another on that narrow thoroughfare, suggested the erection of a depot for the common use of the companies. The office of the R. & S. R. Co. was at 10 First Street, and the offices of the other companies were at 199 River Street.

By the Act, passed June 20, 1851, the city and the several R. R. companies were authorized to build a depot and to lay tracks to it through the city. Under the Act, the Troy Union Railroad Company was formed, July 21, 1851.



SHOWING TROY HOUSE  
AND FIRST R. & S. R. R. OFFICE.

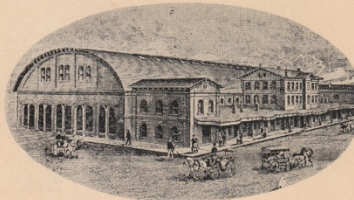
Located at 10 First Street in 1836.  
R. & S. Coaches in front.



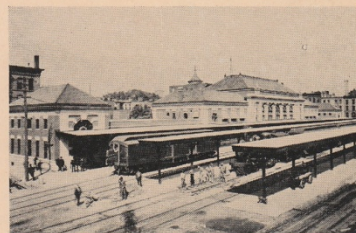
UNION STATION  
BUILT IN 1854. BURNED IN MAY, 1862

Located on Union Street between Fulton and  
Broadway.

UNION STATION  
Erected after fire of May 10th, 1862.  
Located on Union Street between Fulton and  
Broadway.



UNION STATION, DISMANTLED IN 1902



UNION STATION, BUILT IN 1903

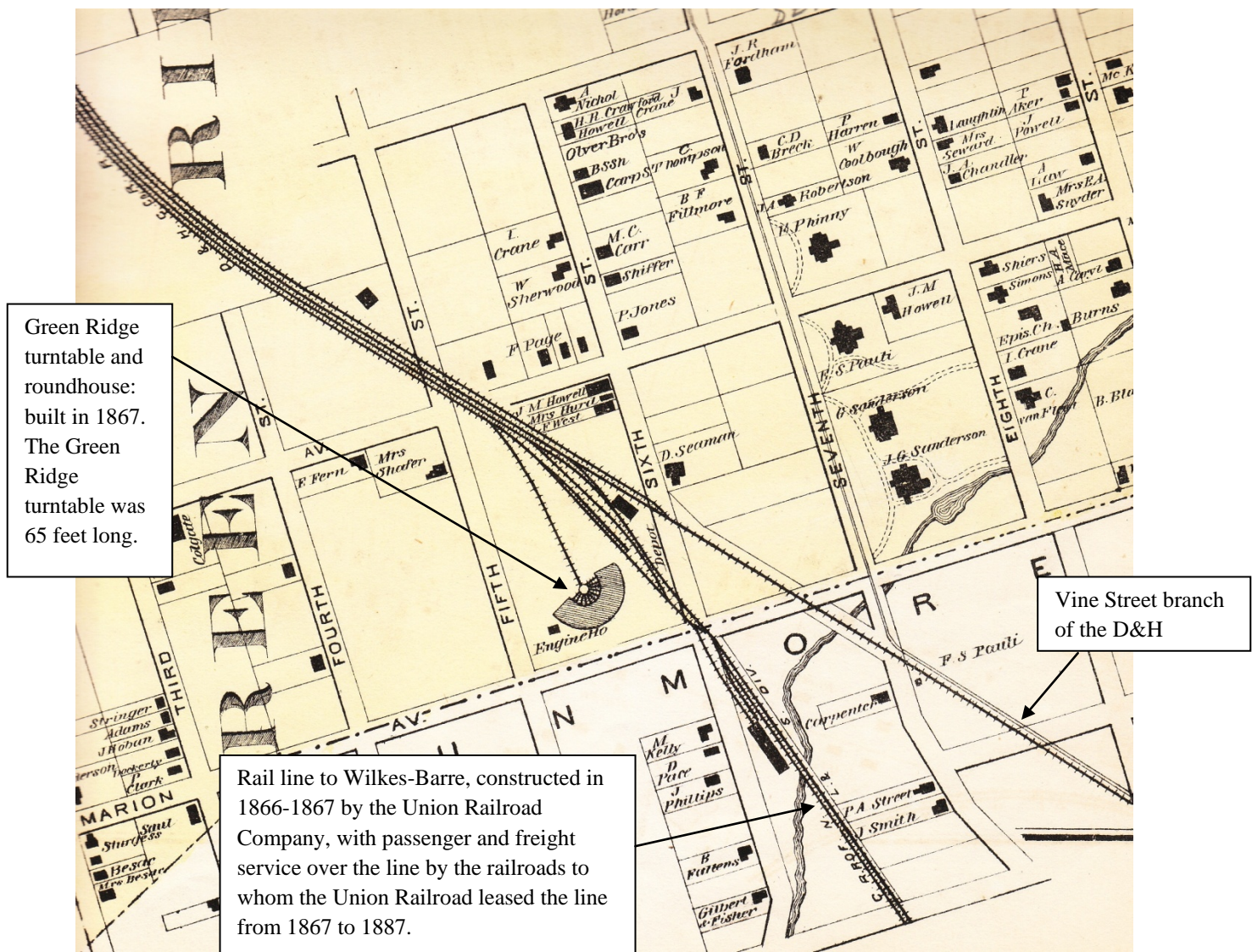


## Green Ridge Roundhouse and Turntable

In the *Valley Road Summary*, we read the following about the Green Ridge roundhouse and turntable:

"In 1867, a round-house of twelve stalls, together with an iron turntable [65 feet long], was built at Green Ridge. Two of these stalls were fitted up for a locomotive repair shop and the company's engines were repaired there until 1876, when the increasing number of locomotives made it imperative that a larger shop, with improved machinery, be erected, and a locomotive shop (which has since been considerably enlarged) was built near the Carbondale upper roundhouse in that year."

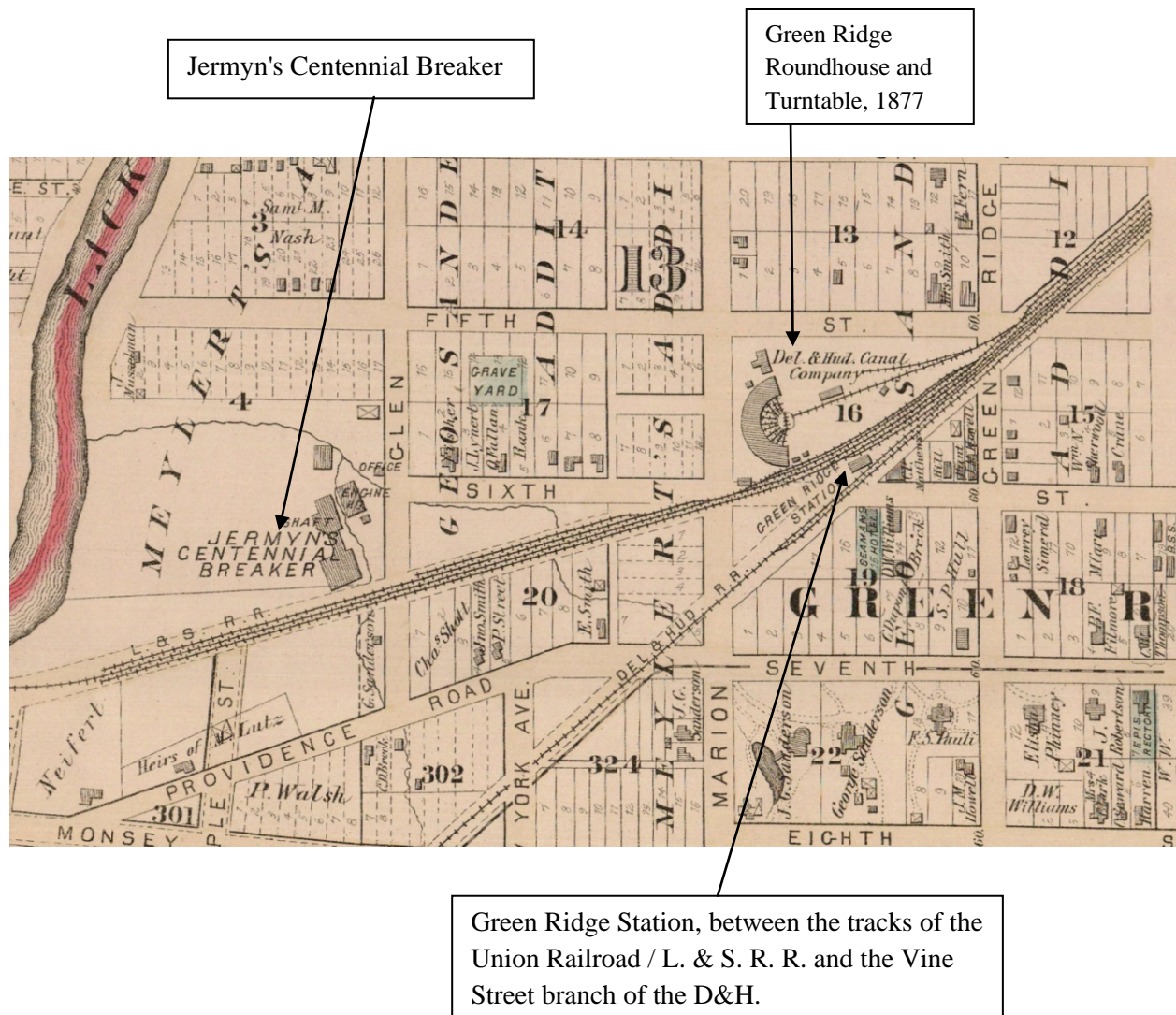
Given below is a detail of the Green Ridge area from the 1873 D. G. Beers *Maps of Providence and the City of Scranton*. On that detail we see the Green Ridge roundhouse and turntable.



Here are some additional views of the Green Ridge roundhouse and turntable.

1877

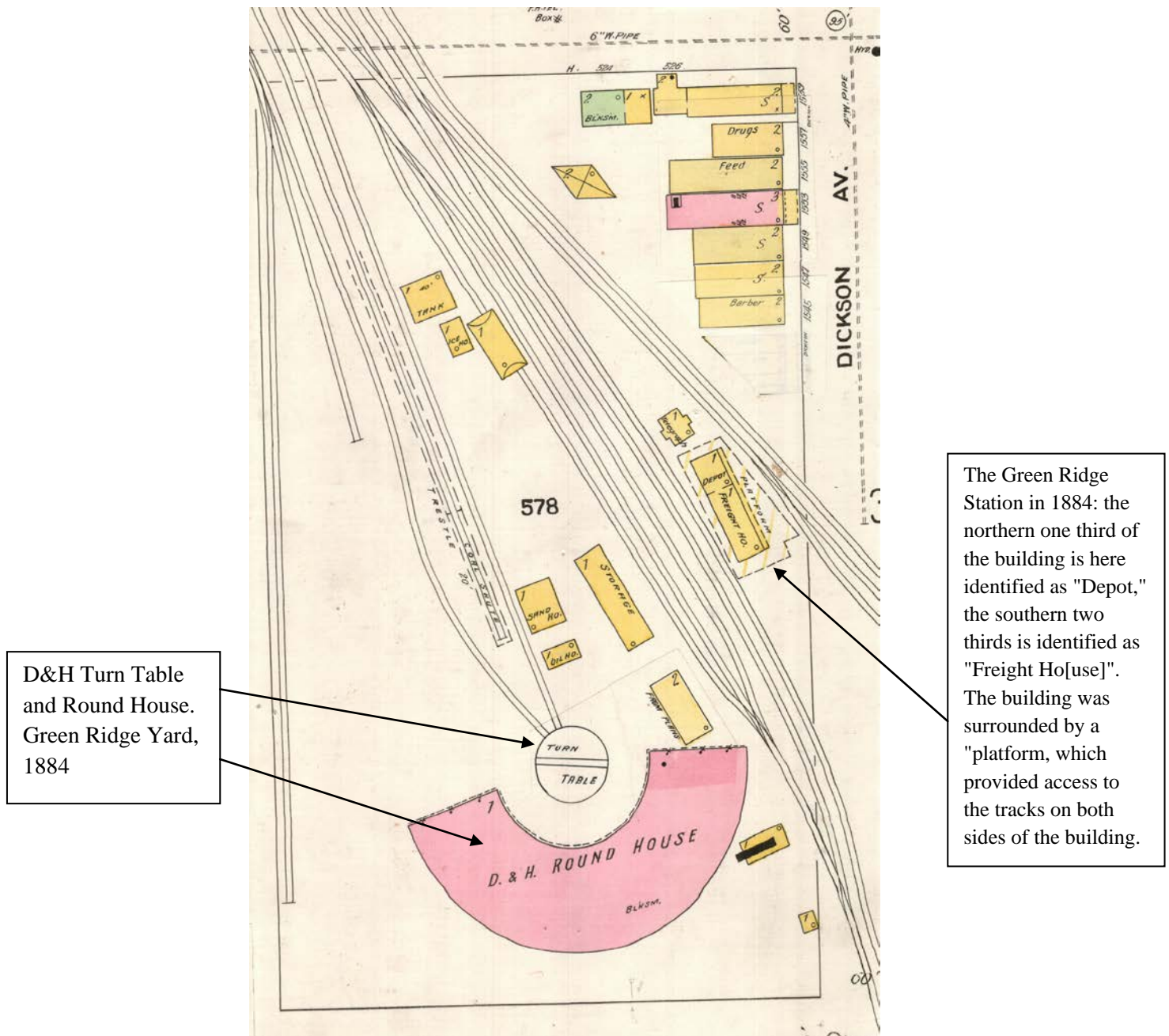
The Green Ridge area as shown on the detail given below from *City Atlas of the City of Scranton, Pennsylvania*. G. M. Hopkins, Philadelphia, 1877. Collection of Lackawanna Historical Society.





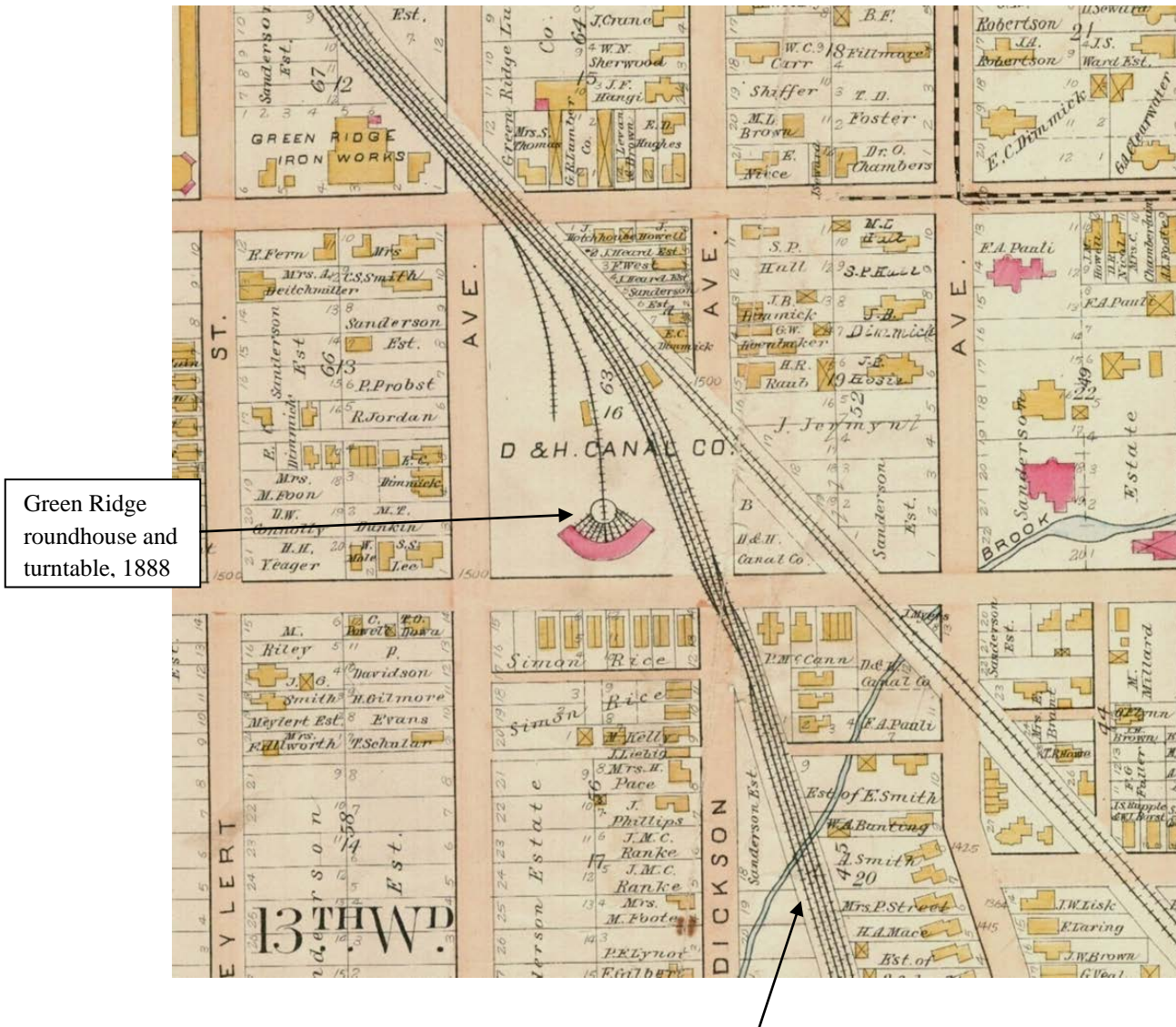
1884

Here is a view of the Green Ridge roundhouse and turntable from *the Map of Scranton Penn.*, Sanborn Publishing Co., April 1884. Map in the collection of the Lackawanna Historical Society, Scranton, PA.



1888

The Green Ridge Yard in 1888 is shown below in a detail from the *Atlas of the City of Scranton and Borough of Dunmore*, published by L. J. Richards & Co., Philadelphia, PA, 1888. Map in the collection of the Lackawanna Historical Society.



Smash up in the Green Ridge Yard in 1887:

**"Wreck at Green Ridge.** / A serious smash-up occurred in the 'yard' of the Delaware and Hudson Canal Company at Green Ridge at about half-past six o'clock last evening. A coal train bound north, Michael McCarty, conductor, contained one car with a bent axel. When the train was passing over a 'frog' in the yard the car with the bent axel jumped the track followed by four other cars. / A freight train from Carbondale, William Blake, engineer, David Robbins, conductor, was passing by on the south bound track at the time. The coal train cars plunged into the freight train and wrecked one of the freight cars. The wreck thus blocked both tracks and the passenger train from Carbondale, which leaves this city at 7 o'clock was delayed one hour and a half at the Green Ridge depot. The south-bound track was finally cleared and was used until the other track was cleared late last night. One freight car and four coal cars were smashed but none of the train men were injured. Business on the road was greatly interfered with and ten crews were 'laid out' by the wreck for several hours.--*Republican of Tuesday.*" (*The Journal*, November 10, 1887, p. 2)

In 1888, Patrick F. Haran, the inventor and patentee of a street car fender, was named foreman of the Green Ridge roundhouse. This we learn from the biographical portrait of the man that is given on pp. 636-37 of *PABRLC*, as follows:

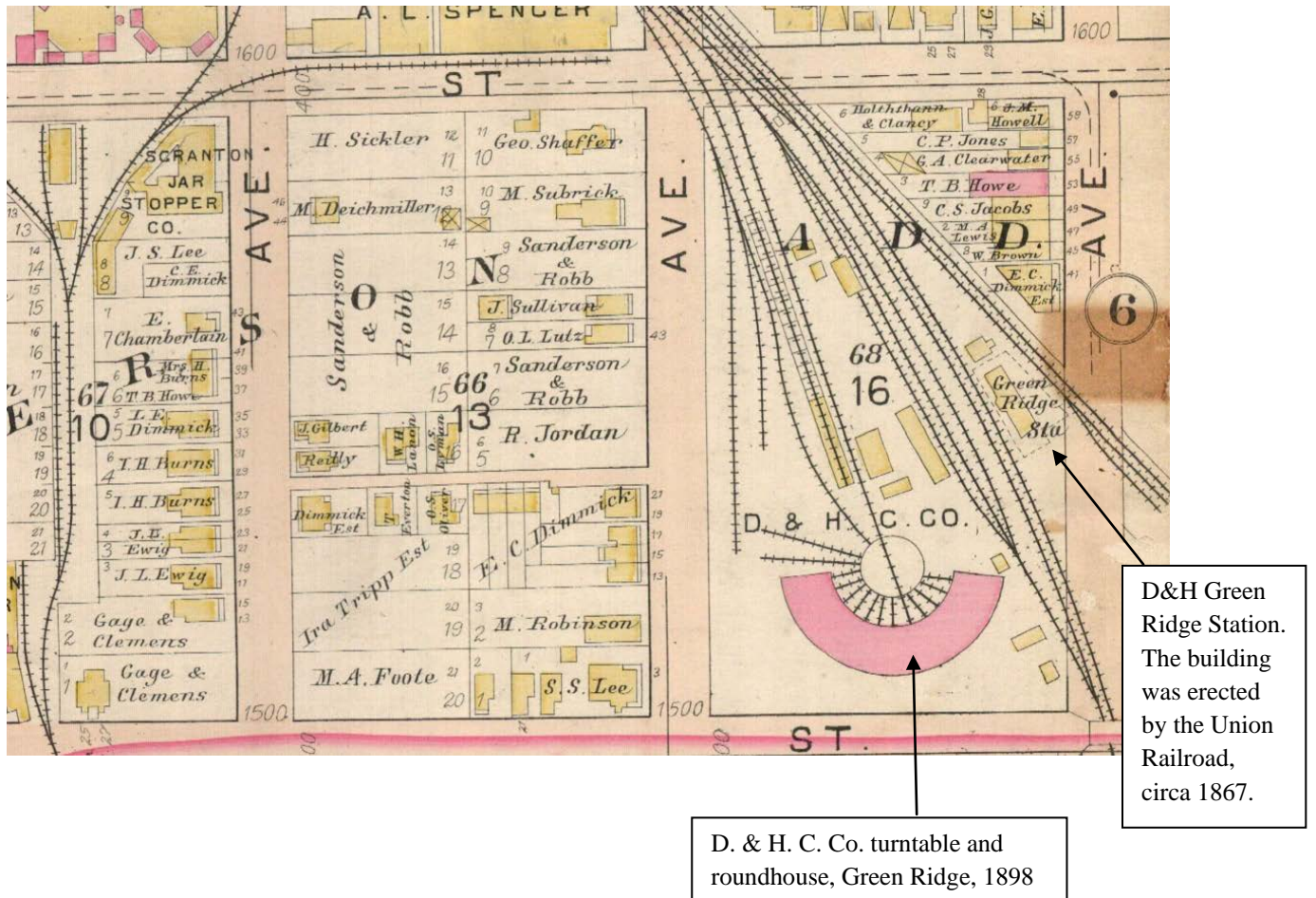
**"PATRICK F. HARAN**, foreman of the roundhouse of the Delaware & Hudson Railroad and Canal at Scranton and the inventor and patentee of the Haran street car fender, was born in Carbondale, Pa., in 1845, and is of Irish parentage and descent. His father, Luke, was born in County Sligo, came to America at the age of eighteen years and settled in Carbondale when that city was but an insignificant hamlet. He took a position as miner with the Delaware & Hudson Company, and proved so steady and faithful that he was retained in their employ for more than forty years. . . / At an early age [Patrick F.] took a position as slate picker with the Delaware & Hudson Company. / Coming to Scranton in 1863, Mr. Haran served an apprenticeship of three years to the machinist's trade in the shops of the Dickson Manufacturing Company, after which he spent one year at the Tobyhanna Mills and a similar period in Oxford, N. J. He returned to Scranton in 1867 and worked in the locomotive department of the Delaware, Lackawanna & Western shops for about three years, after which he was employed as a machinist in the Delaware & Hudson shops. When the shops were removed to Carbondale, he put in the shafting there. In 1888, he was made foreman of the roundhouse at Green Ridge, and has since had entire charge of the men here, being, in point of years of service, the oldest machinist in the railroad department [emphasis added]. . . / As previously stated, our subject is the inventor and patentee of a street car fender, that can be run within four inches of the track and has been tried successfully. Had it not been for political influence brought to bear, it would have been adopted for general use in the city.



From the biographical portrait of Barney Farishon that was published in the November 1, 1931 issue of the *Delaware and Hudson Railroad Bulletin* (pp. 323-324), we learn that “In 1891 Mr. Farishon entered Delaware and Hudson employ in the roundhouse at Green Ridge, Pa., as a hostler, although he was called upon at times to perform various tasks about the locomotives.”

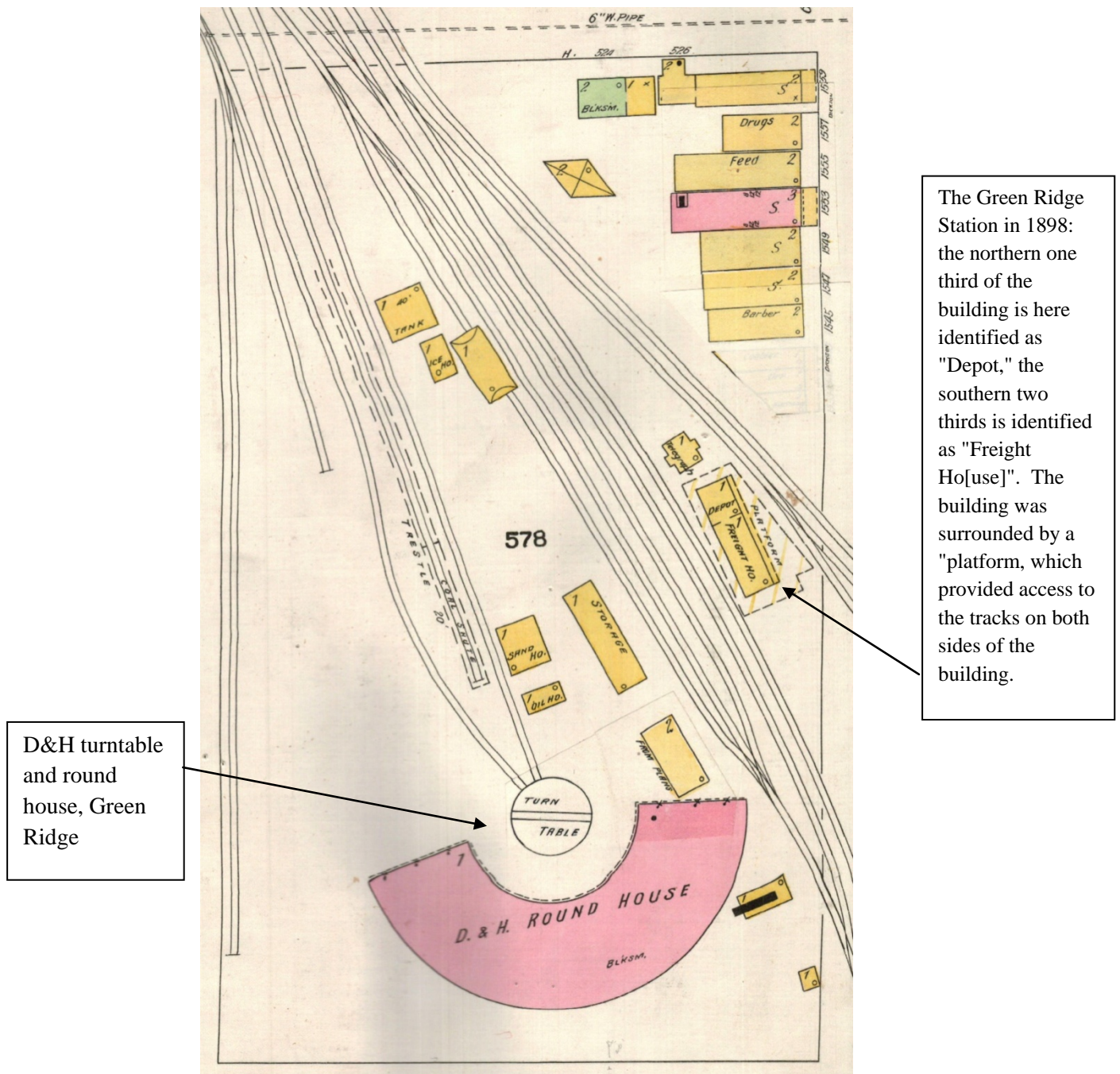
1898:

The Green Ridge Yard in 1898 is shown on the detail given below from the map of the *City of Scranton and Borough of Dunmore, Pennsylvania, 1898*. Map in the collection of the Lackawanna Historical Society.



1898:

The D&H properties in the Green Ridge area as seen on *Scranton Pennsylvania*, including *Dunmore*, Sanborn-Perris Map Co., New York, New York, 1898:





### **The D&H Green Ridge Yard:**

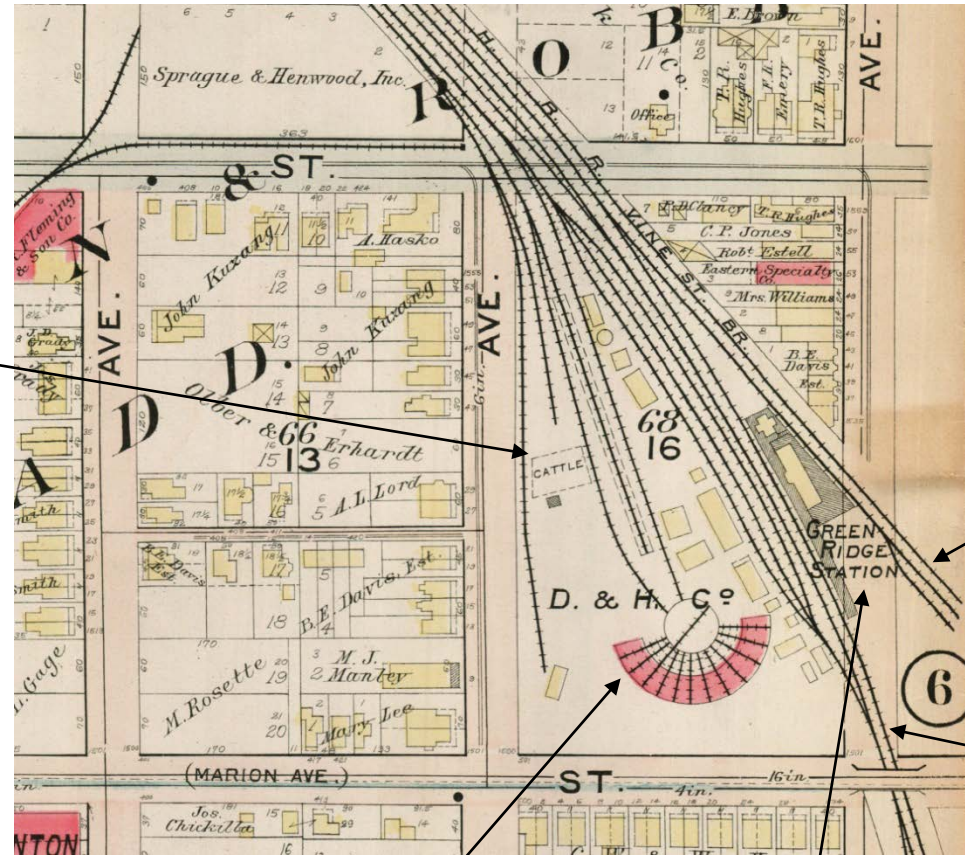
In 1911, Alfred Constantine was named yard conductor at Green Ridge, and held that position for the following 25 years. For most of those years, Alfred Constantine and engine No. 37 worked together. About Alfred Constantine and No. 37 we read the following in the biographical portrait of the man ("Thinks Railroading Safe") that was published in the September 1, 1937 issue (pp. 131-32, 141) of *The Delaware and Hudson Railroad Bulletin*: "Mr. Constantine and 'The 37' had worked together so long that they seemed as much a part of the yard as the old roundhouse itself to the men of Green Ridge." (p. 131) Alfred Constantine began his career with the D&H as a runner at the coal-loading chutes at the Marvine colliery. "He had to 'spot' the 4- to 5-ton, 4-wheeled cars under the chutes for loading, stop them on the track scales while the weight of the contents was recorded, then 'let them down' to the 60-car capacity storage tracks from which they were later picked up by railroad crews. These cars were run entirely by gravity at the breaker, the receiving, loading, scale, and storage tracks being laid out on a continuous down grade. Steam locomotives hauled the coal from the breaker to the foot of 'G' plane at Olyphant." (p. 132)

In 1892, Constantine was hired by Yard Master George Garey to fill a vacancy on one of the ten crews then running out of Green Ridge. "Two crews each made two round trips between Hudson and Olyphant daily, returning to Green Ridge at night; the other eight were on mine runs in the vicinity of Scranton." (p. 132)

About this portion of Constantine's railroad career, we read the following in his biographical portrait: "Mr. Constantine went to work as a brakeman with Conductor 'Judd' Callender, delivering empty cars to and taking loaded cars away from the Von Storch, Leggitts Creek, and Marvine breakers, as well as handling car loads of mine supplies consigned to the these collieries. After seven years on that mine run, Mr. Constantine was assigned to a Green Ridge yard job with Yard Master and Conductor Edward Grant, doing industrial and other switching between Green Ridge and Scranton stations as well as interchanging cars with the Lackawanna and Erie railroads. / Beginning shortly after his transfer to the railroad, Mr. Constantine became extra conductor, substituting for all of the fifteen regular men than stationed at Green Ridge to handle switching, mine, and local freight runs. Soon he was made conductor of the crew which did the switching at the Eddy Creek, Olyphant, and Grassy Island breakers, a run which he held for one year. Next, for two years, he was in charge of the local freight running between Green Ridge and Avoca. / In 1911 Mr. Constantine became yard conductor at Green Ridge, the position he held for the next 25 years. At first there were no night switchers in the yard and Mr. Constantine worked days only until 1934 when he bid in a night switcher, remaining on that job until his retirement [on June 1, 1936]." (p. 132)

There is a photograph of Locomotive No. 37 and its crew at Green Ridge in 1914 on page 132 of Constantine's portrait in *The Delaware and Hudson Railroad Bulletin*. The caption reads as follows: "On the running board, Engineer Tom Pace; L. to R. on ground, Eugene Seigle, John Hugel, Horace Freer, Mr. Constantine, Bruce Moyer and Ralph Twining."

Detail of the 1918 map of Scranton from *Atlas of the City of Scranton and Borough of Dunmore, Lackawanna County*. Volk & Kuehls, Philadelphia, PA 1918, showing the Green Ridge station and roundhouse area and the beginning of the Vine Street branch of the D&H:



The Green Ridge Station was located between the tracks of the Union Railroad and the Vine Street Branch of the D&H at Green Ridge. The original building, which was built by the Union Railroad, c. 1867, was used in the passenger and freight service offered by those railroads to whom the Union Railroad leased the line until 1887. It was also used by the D&H from 1867 to the end of the 19<sup>th</sup> century and after in its passenger and freight operations on the Vine Street branch of the D&H to Vine Street, initially, and, ultimately, to Lackawanna Avenue. Beginning in 1887, when the D&H acquired full control of the former Union Railroad line through to Wilkes-Barre, this station was used by the D&H on its passenger service into downtown Scranton (Bridge Street Station) and to Wilkes-Barre over the former Union Railroad line.



### The Green Ridge Yard in 1958-1959:

About the Vine Street Branch of the D&H and the Green Ridge Yard in 1958-1959, we read the following in "From the Top" by Howard Hontz in the March 2015 issue (pp. 12, 14) of the *Bridge Line Historical Society Bulletin*:

"It [the Vine Street Branch] provided service to the various customers in the city of Scranton and to the D&H freight house located in town. Service on this branch was provided by switch engines from Green Ridge Yard. Green Ridge had three yard crews to do the switching. No. 1 marked up at 7:00 A.M., the No. 2 marked at 7:30 A.M., and the No. 3 crew marked at 3:30 P.M.; all were 5-man crews."

Here are two photographs taken at Green Ridge in the 1970s by Dave Miller:

This photo was taken at Green Ridge by Dave Miller in October 1978 (downloaded here from the Delaware and Hudson *Facebook* page, April 6, 2015):



This photo was taken at Green Ridge by Dave Miller in June 1979 (downloaded here from the Delaware and Hudson *Facebook* page, April 6, 2015):





Here are two twentieth century photographs of the Green Ridge Roundhouse.

1. *Green Ridge Roundhouse*, photograph posted on Delaware and Hudson *Facebook* page by Dave Miller on April 6, 2015. Photo by Mike Bischak, September 10, 1977.



Mike Bischak photo  
Green Ridge yd.  
Scranton, Pa.  
Sept. 10, 1977



2. *Green Ridge Roundhouse*, photograph posted on Delaware and Hudson *Facebook* page by Tim Granahan, August 30, 2015. Date of photograph not known.



The nineteenth-century Green Ridge Turntable area / Engine House / Depot area in the block bounded by Green Ridge and Marion Avenues and Von Storch and Dickson Avenues contains many remnants of the D&H. Several photographs were taken by the author on June 24, 2007 from the footbridge that crosses the existing rail lines there. Two of those photos are shown below.



View North from pedestrian bridge over D&H tracks at north end of Green Ridge yard, Scranton, PA. Photo by the author on June 24, 2007.



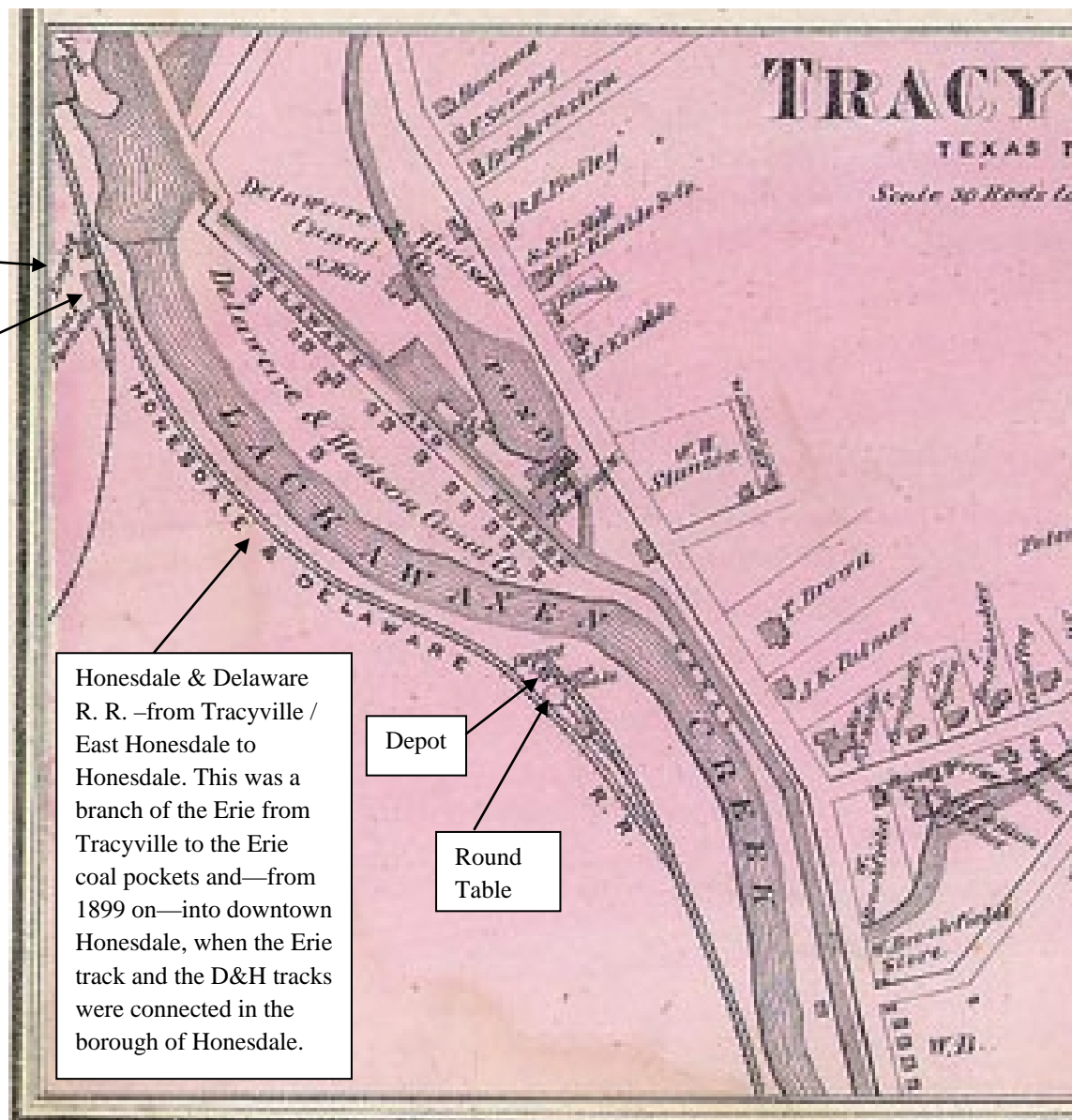


View South from pedestrian bridge over D&H tracks at north end of Green Ridge yard, Scranton, PA. Photo by the author on June 24, 2007.



## Honesdale Roundhouse and Turntable

The Honesdale roundhouse and turntable were located in Tracyville in Texas Township, and not in the borough of Honesdale. The exact location of the turntable in 1872 is shown below in the detail of the Tracyville page from *The Atlas of Wayne County, Pennsylvania*, by F. W. Beers, published by A. Pomereoy & Co., NY, 1872.



### **East Honesdale note:**

For the period 1868-1899, Erie coal cars traveling from the East came as far as Tracyville/East Honesdale on the Erie and were then moved onto the Honesdale & Delaware Rail Road for movement to the Erie coal pockets in Texas Township. Any turning of engines was done on the turntable at Tracyville.

East Honesdale/Tracyville was the end of the line for Erie passengers traveling West until 1900.

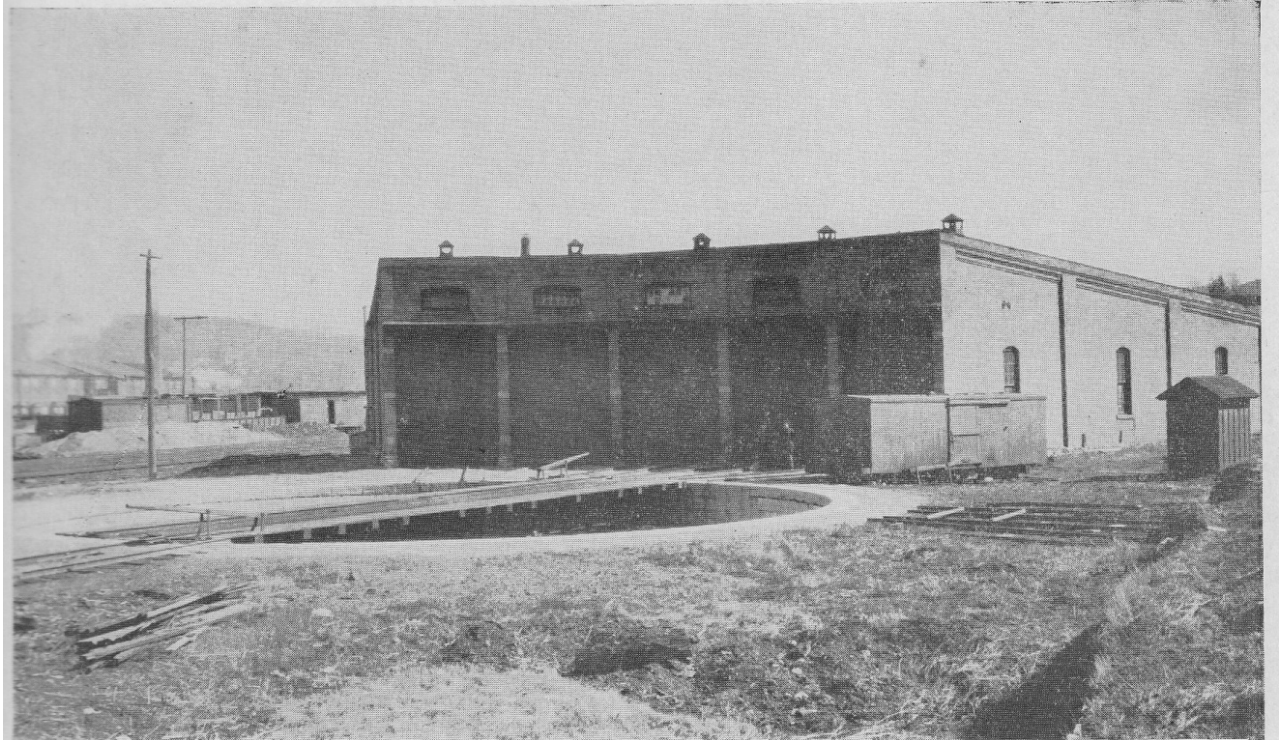
In *Centennial and Illustrated Wayne County* (Honesdale, 1900, p. 141) we read: "For more than thirty years [1868 to 1900] passengers came to and went out of Honesdale on the Erie railroad, yet not until Monday, Oct. 1, 1900, did they actually ride out of and into the town on the cars. For a third of a century people were obliged to walk or ride a distance of a mile from town to board the Erie cars and although they purchased tickets from the various points to Honesdale they were a mile from the town when they stepped from the cars."

From Leslie's *Canal Town*. . . (pp. 110-111), we learn that one of the options available for passengers between Honesdale and East Honesdale was the Whitney omnibus:

"Since the depot was below the borough, passengers either had to walk to and from the beginning of the railway or ride on the Whitney omnibus for a fee of twenty-five cents. The depot at Tracyville, later known as East Honesdale, was to remain in use until 1918 after which all freight business was done at the Delaware and Hudson office in Honesdale. Passenger service had begun to go all the way into Honesdale some years before. Only one depot was placed between Hawley and the end of the line at Traceyville, and that was at White Mills to serve the Dorflinger glass factory." (Leslie, *Canal Town*. . . , pp. 110-111)

The end of the line for Erie freight cars from the east for the period 1868-1900 would also have been the depot in Tracyville. Even after the Erie line was extended into downtown Honesdale/the borough of Honesdale in 1900, the Erie freight operations were conducted from the depot in Tracyville until 1918, after which all freight business was done at the D&H office in Honesdale.

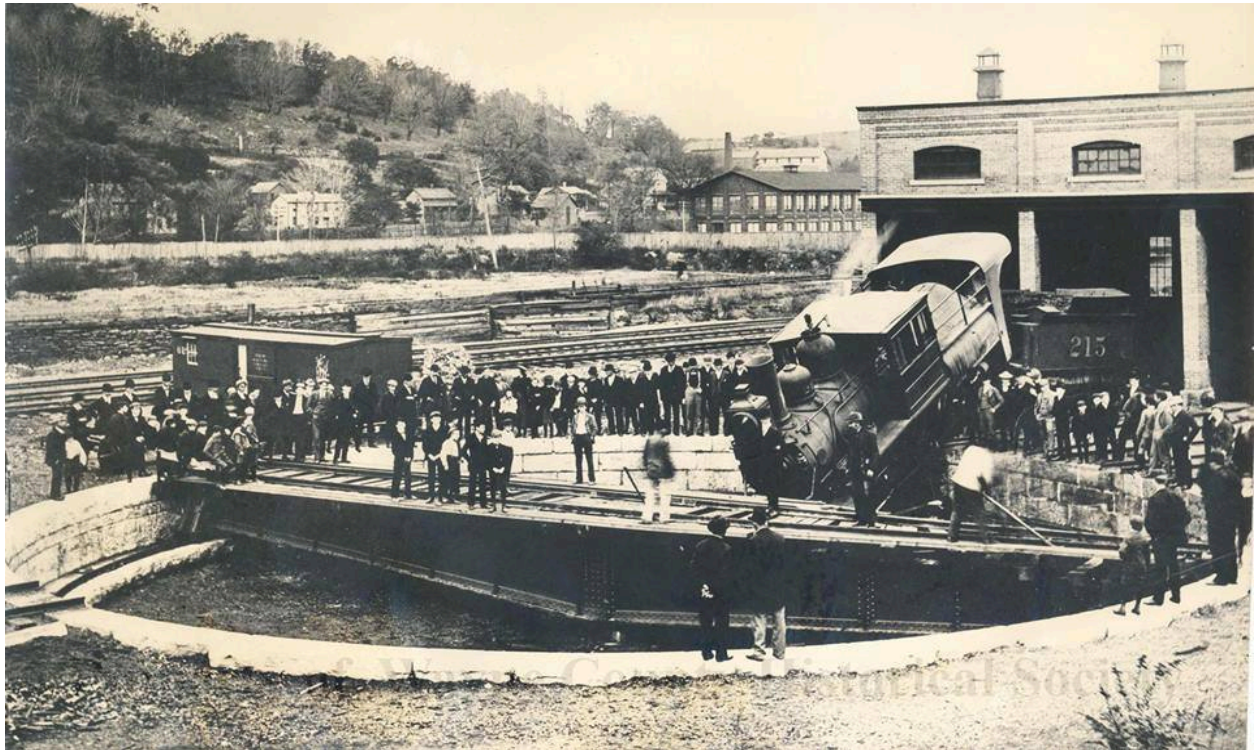
The Honesdale/Tracyville turntable and roundhouse (5 stalls) in 1890 is shown in *The Delaware and Hudson Company BOARD of MANAGERS INSPECTION OF LINES : : JUNE 7, 8, and 9, 1929*, p. 15. Here is that photo, which is dated "1890" by the D&H:



A photograph of the Honesdale roundhouse and turntable (located in East Honesdale/Tracyville) is given on Page 17 of *Honesdale*, in the *Images of America* series, by Kim Erickson, 2015. In the caption there on this photograph it is stated that this turntable was manually operated and that it was located at the south end of Main Street. In this photograph, given on the following page, we see engine No. 215 in a highly compromised position in the turntable pit.

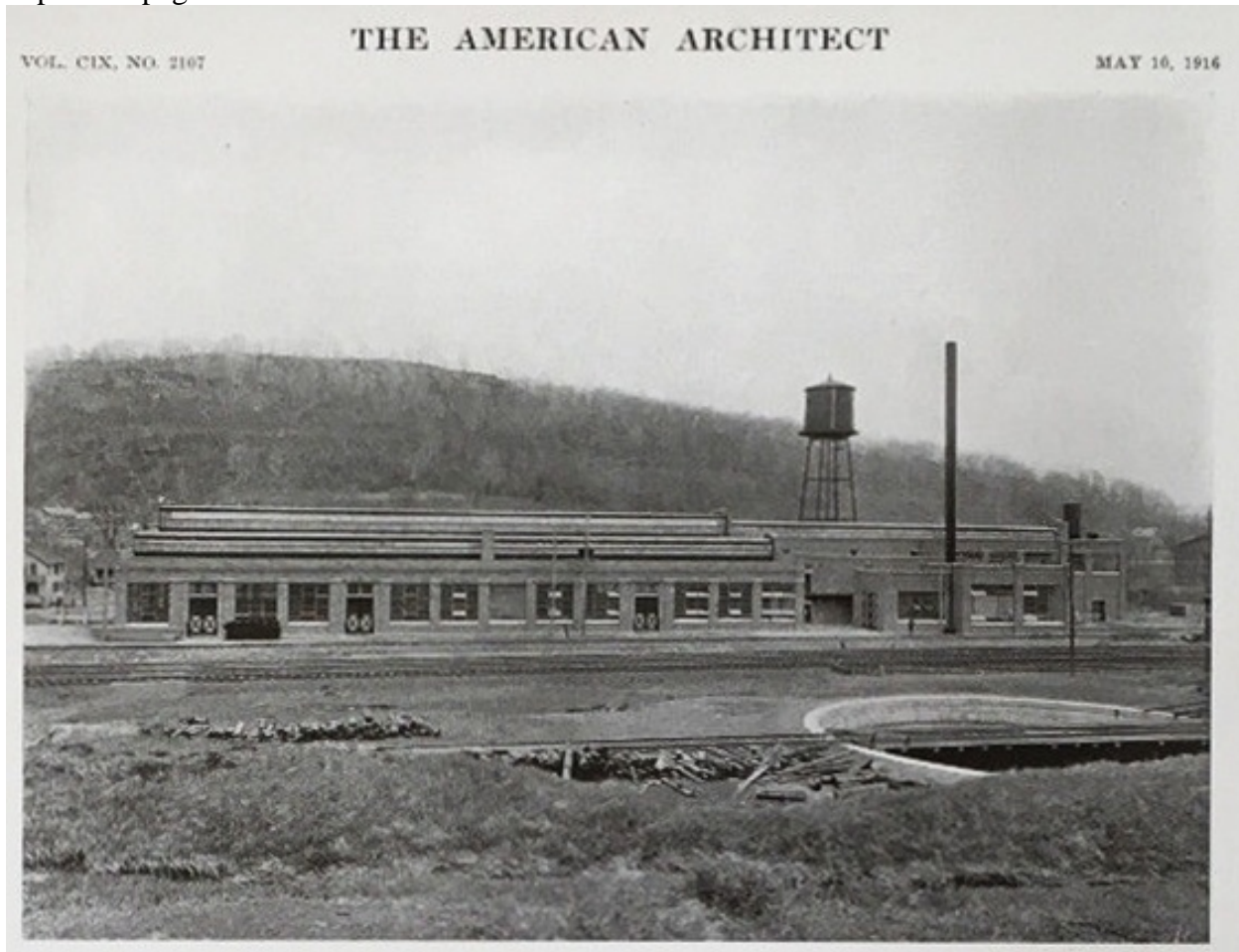


D&H Engine No. 215 in the pit of the Honesdale turntable (page 17 of *Honesdale*, in the *Images of America* series, by Kim Erickson, 2015):

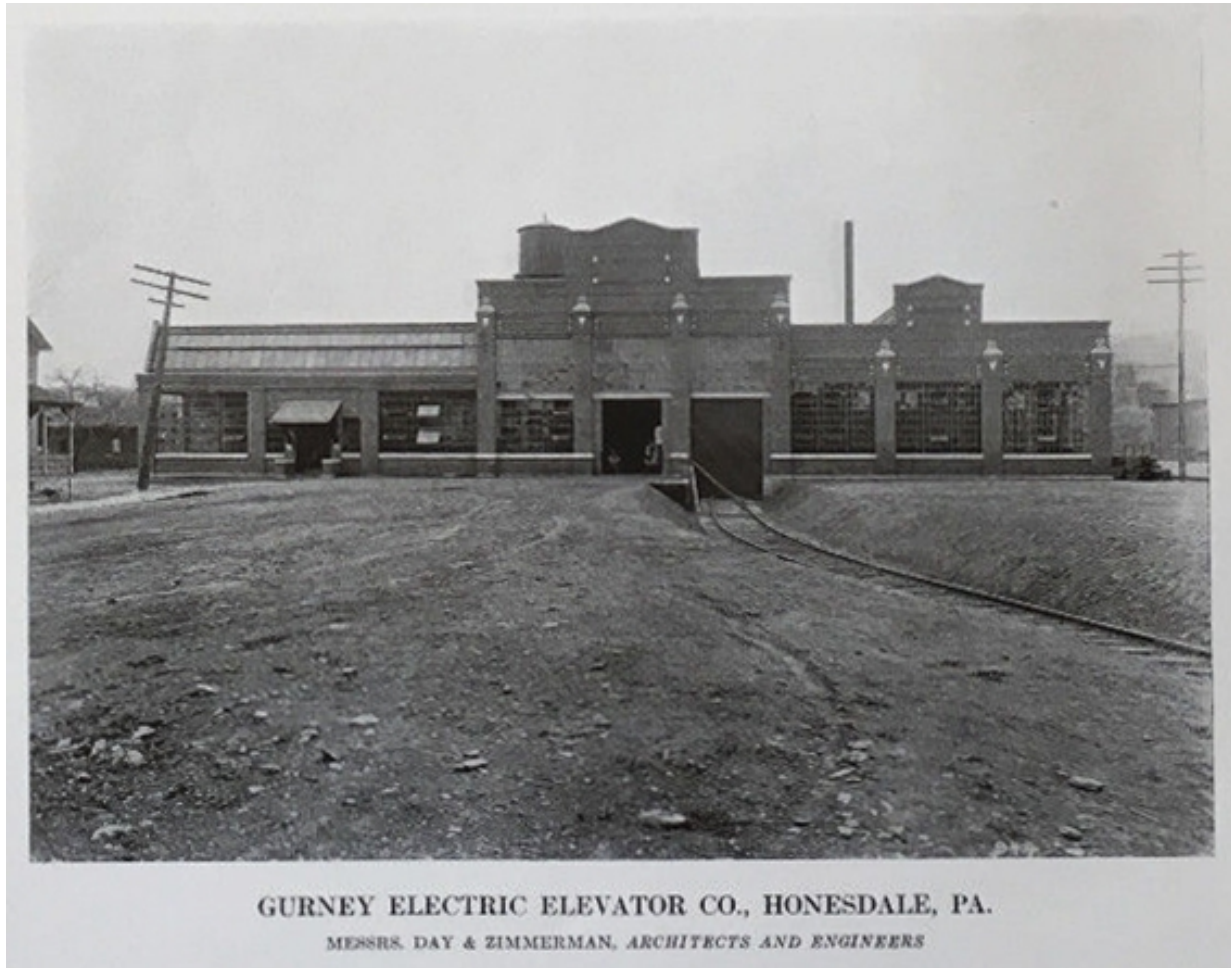


In the May 10, 1916 issue of *The American Architect* (Volume CIX, No. 2107), Messrs. Day & Zimmerman, Architects and Engineers, sponsored a full-page ad, on which are presented two photographs of the Gurney Electric Elevator Co., Honesdale, PA, which they designed. Here are those two photographs:

Top of the page:

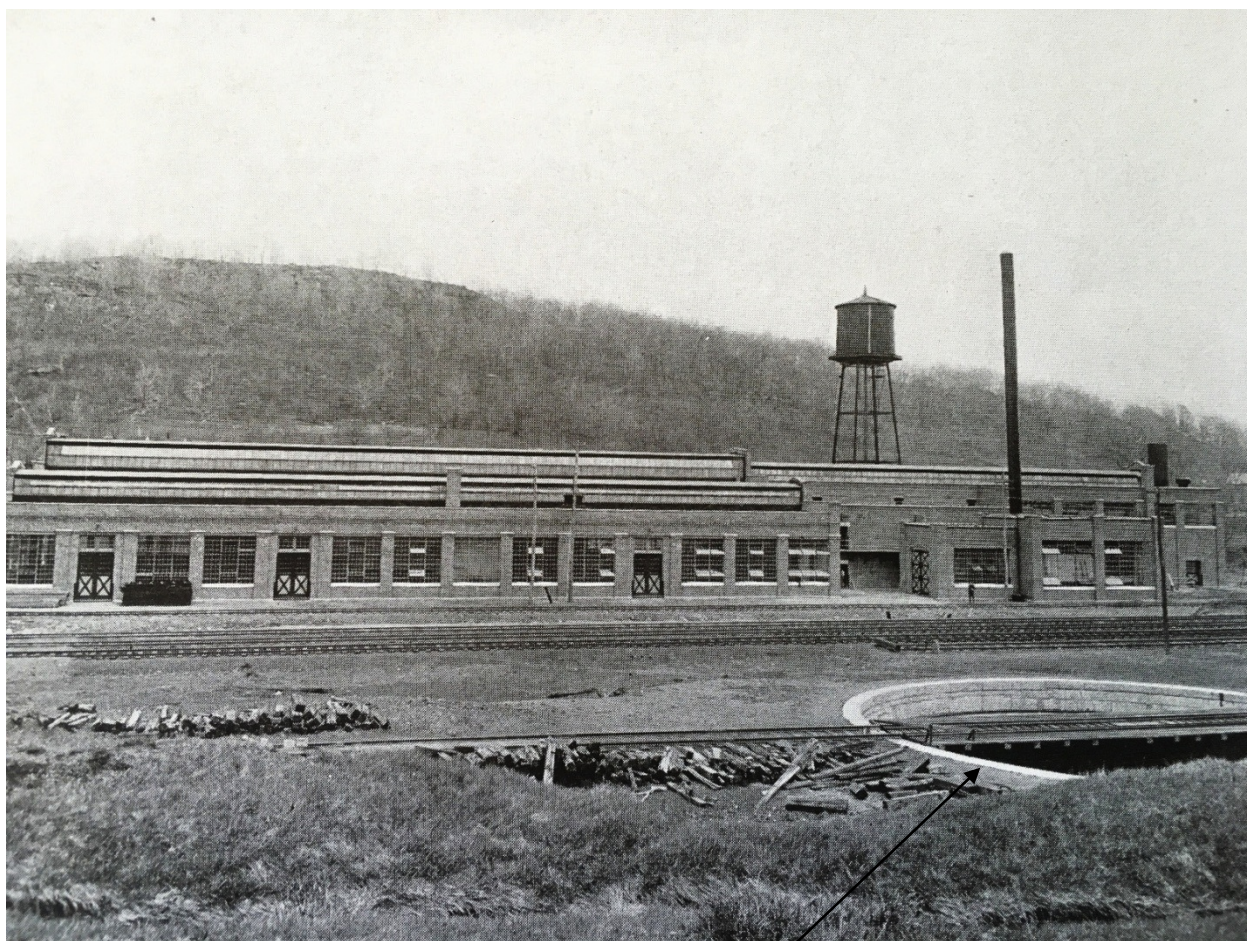


Bottom of the page:



Remarkably, the turn table in East Honesdale/Tracyville is shown in the foreground of the photograph at the top of this Day/Zimmerman page in *The American Architect* of May 10, 1916.





Turn table at Tracyville/East Honesdale.  
Thanks to John V. Buberniak for bringing to  
our attention this remarkable find in the  
Day/Zimmerman photos that were offered for  
sale on E-Bay on 02-14-2016.

In 1915, Barney Farishon "was put in charge of the roundhouse at Honesdale in which position he continued until that plant was abandoned." Biographical portrait of Barney Farishon ("Likes America Best") published in the November 1, 1931 issue (pp. 323-324) of *The Delaware and Hudson Railroad Corporation Bulletin*.

We have not yet determined the exact year in which the Honesdale roundhouse was abandoned, but it was before 1931 (the date of the Barney Farishon interview for *The Delaware and Hudson Railroad Corporation Bulletin*).

## Mill Creek Roundhouse and Wye

### Union Railroad line from Green Ridge to Wilkes-Barre

In 1867, the Union Railroad Company of Wilkes-Barre completed the 15-mile long standard-gauge rail line from Green Ridge to Union Junction (near Hudson, formerly known as Mill Creek).

Where was Union Junction? In *A Century of Progress*, pp. 198-200, we read:

“The Union Coal Company, after it had merged the Howard company in February, 1867, completed railroad construction northward from Union Junction, in the Lackawanna Valley, to Green Ridge. The location of Union Junction may be stated as approximately one and one-half miles north of the present station at Hudson [formerly known as Mill Creek] on the Pennsylvania division of the company’s railroad, so that the railroad from Union Junction to Green Ridge covered a distance of nearly fifteen miles. As Hudson is only three and one-half miles north of Wilkes-Barre, it is apparent that a long step toward the latter had been taken.” (In 1886, the D&H extended the line three miles to the south to the Lehigh Valley depot in South Wilkes-Barre.)

The line from Green Ridge to Union Junction opened on June 18, 1867, and the Union Coal Company leased the exclusive right to run passenger and merchandise between Union Junction and Green Ridge, for a period of twenty years, 1867-1887, to the Lehigh Coal & Navigation company, the latter company afterward transferred this lease to the C. R. R. of N. J. The D&H could use the line (but not for passengers and merchandise) but did not control the line. The D&H would gain control of the line in 1887.

In 1871, the D&H extended the rail line (standard gauge) from Union Junction one and one-half miles to the south to Mill Creek (originally called *Pumpkin Hollow*, and ultimately called *Hudson*). Four standard-gauge D&H engines (Nos. 6, 7, 8, 9) were stationed at Hudson and, in the period 1871-1886, Nos. 6, 7, and 8 hauled loaded Gravity-gauge coal cars (originating at the Baltimore mines in Wilkes-Barre) from Hudson to Olyphant, where the cars were then sent through the Gravity planes to Honesdale. (No. 9 was used exclusively on mine runs.)

The four standard-gauge D&H locomotives that were stationed at Hudson for the period 1871-1886:

6. *Mill Creek*: D&H Engine No. 6, first standard-gauge engine for the Union Railroad was the Mill Creek; built at Grant Locomotive Works and was brought to the National Crossing, near the Minooka Station, over the tracks of the DL&W on April 2, 1867, and pushed down the line a short distance and her boilers filled with water carried from the river in pails. The fire was started and D. C. Benscoter, acted as fireman, the engineer's name was John Bloom; stationed at Hudson, and operated between Olyphant and Hudson; painted in bright hues.

7. *E. A. Quintard*: D&H Engine No. 7 (Dickson No. 4) purchased May 1, 1867, and engineer Bloom and fireman Benscoter (from No. 6 above) were transferred to her, and at that time the Mill Creek was sent to Mill Creek to do switching and mine work; stationed a Hudson, had four drivers, a road engine, and operated between Olyphant and Hudson; painted in bright hues; this engine (forty-nine inch drivers) was manufactured by the Dickson Manufacturing Company and received by the D. & H. on June 18, 1870.

About the E. A. Quintard and about D&H engines Nos. 6 and 8, we read the following in the biographical Portrait of George Cotton, titled " 'Twas Called *Pumpkin Hollow*," that was published on pp. 99-100 of the April 1, 1932 issue of *The Delaware and Hudson Railroad Bulletin*:

"One of the most attractive Delaware and Hudson engines ever to turn a wheel on the Pennsylvania Division, according to George Cotton, retired Wilkes-Barre roundhouse machinist, was the old No. 7, which was stationed at Hudson back in 1875. There were hand carved grapes on her tender so realistically done that one was tempted to pick them. The engine itself, moreover, was painted in a variety of colors in addition to the conventional black, and the numerous brass bands, handles, bell and flag staffs. The top of the smokestack was bright red, while dashes of gold and blue completed her gaudy dress. / The other two engines then assigned to Hudson [called *Pumpkin Hollow* initially, and then *Mill Creek*], Nos. 6 and 8, named *Mill Creek* and *J. J. Albright*, respectively, were also painted in bright hues. Numbers 7 and 8, both of which had four drivers, were known as road engines, and operated between Olyphant and Hudson; No. 9, a six wheeler, was used exclusively on mine runs."

8. *J. J. Albright*: D&H Engine No. 8, stationed at Hudson, had four drivers, a road engine, and operated between Olyphant and Hudson; painted in bright hues. This was one of 3 Moguls acquired by the D&H in 1870 (also *Coe F. Young* and Chas. N. Talbot).

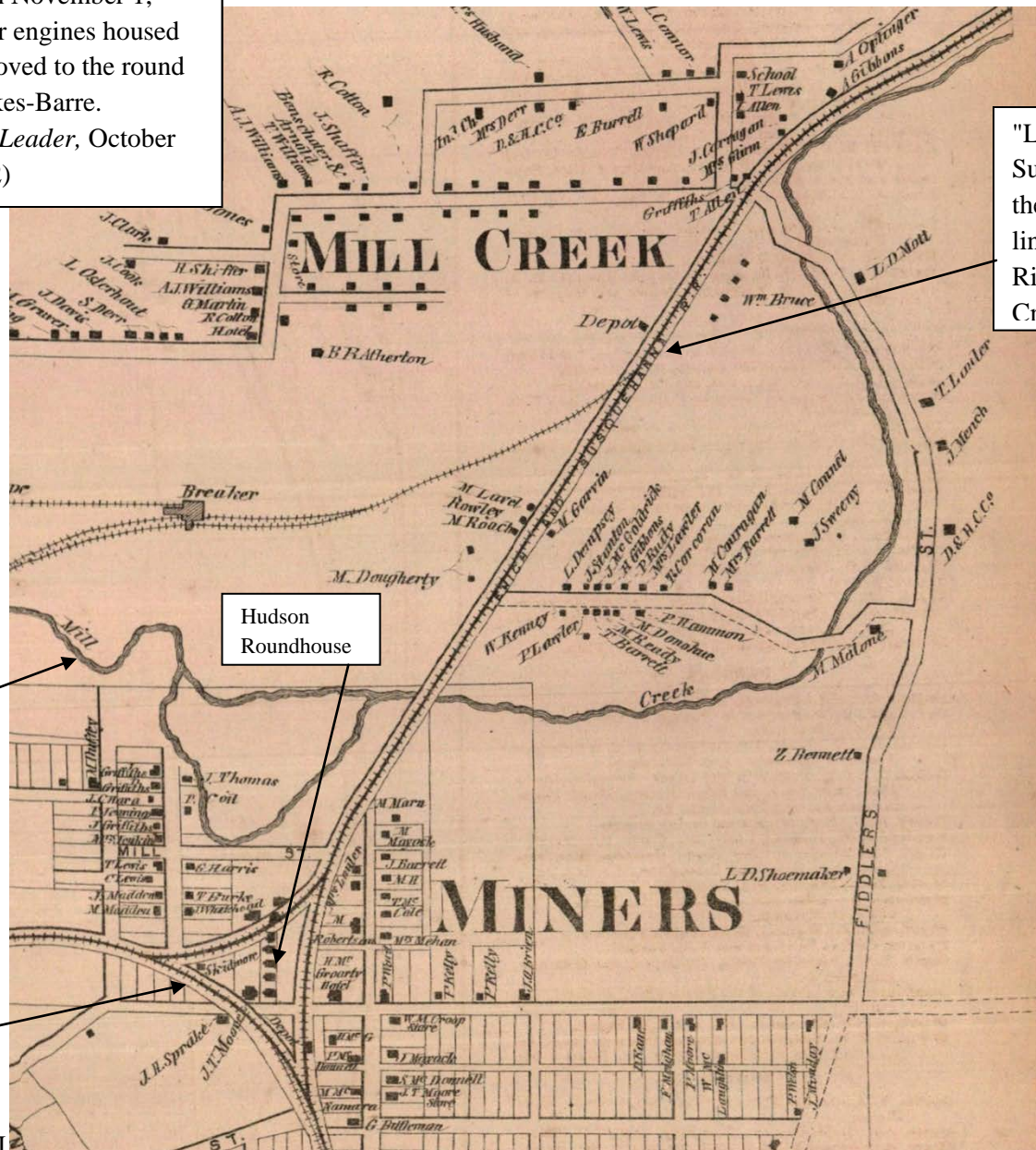
9. *D&H Engine No. 9*: a six wheeler, was used exclusively on mine runs.

When those four engines had to be turned at Hudson, they were moved through the wye there. That wye is shown on the map of Mill Creek from the 1873 *D. G. Beers Map of Luzerne County*, which is given on the following page.



Shown below is a map of Mill Creek for the 1873 D. G. Beers *Map of Luzerne County*.

The Mill Creek roundhouse was abandoned on November 1, 1899; the four engines housed there were moved to the round house at Wilkes-Barre.  
(*Carbondale Leader*, October 31, 1899, p. 2)



"Lehigh and Susquehanna"—the operators of the line between Green Ridge and Mill Creek

Hudson Roundhouse

Mill Creek

Wye for turning around engines and rail cars

In *Passenger and Freight Stations Delaware and Hudson* ("Inspection of Lines, June 7-10, 1928), page 14, we read: "Hudson and the stream flowing through it were formerly called Mill Creek. Five thousand acres of wood land were originally purchased and settled by two brothers, Henry and Richard Drinker. / In 1891, by petition of the citizens of the town, its name was changed to 'Hudson,' taken from the word 'Hudson' of the Delaware and Hudson Canal Company. / It is the junction point of the Wilkes-Barre connecting Railroad and The Delaware and Hudson Company. / Population 3,800."

**Hudson used to be called Pumpkin Hollow:**

George Cotton, was born at Blenavon, Wales, in 1851, the son of a mining foreman. When George Cotton was a small boy, the family moved to America and settled in Bloomsburg, PA. In 1867, the Cotton family moved from Ashland, PA to a community that was known at the time as Pumpkin Hollow, which was later known as Mill Creek, and then as Hudson, where George worked for the Hudson Coal Company.

That we know from the biographical portrait of the man (" 'Twas Called 'Pumpkin Hollow' ") that was published in the April 1, 1932 issue (pp. 99-100, 108) of the *Delaware and Hudson Railroad Bulletin*, wherein we read:

"In 1867 the Cotton family again moved, this time to Pumpkin Hollow, later known as Mill Creek and now Hudson, Penna. Here George was employed in the Union Slope, now operated by the Hudson Coal Company as part of the Loree Breaker's workings, as a mule driver, moving the diminutive coal cars in and out of the mines. Shortly after his arrival he was promoted to the rank of runner, a position which paid \$3.25 a day. As a runner he was in charge of the drivers. It was his responsibility to make sure that each miner had sufficient cars in his chamber at all times and also to give each miner exactly eight cars per day." (p. 100).

On November 1, 1899 the Mill Creek roundhouse was closed down and the four engines that were housed there at that time were moved to Wilkes-Barre. That we know from an article that was published in the *Carbondale Leader* of October 31, 1899. Here is that article

**“NEW D. & H. MOVEMENTS. / Mill Creek Engines to be Moved to Wilkes-Barre . . . /** Some time ago the D. & H. removed the two mine engines which were previously housed in Plymouth, to the round house in Wilkes-Barre and it was reported at the time that the engines at Mill Creek would also be taken to the same place. The Mill Creek crews were considerably exercised over the matter, as many of the men own their own properties in that town, and could not afford to move their families. Months passed and the men had concluded that the rumor of removal was without foundation, but on Friday last bulletins were posted announcing that on November 1 the Mill Creek round house will be abandoned and the engines at present housed there will be removed to the round house at Wilkes-Barre. / There are four engines and crews and the removal upon such short notice will entail considerable discomfort to the men unless provision is made for carrying them to and from their work. At present there are no trains running early enough to take the men down in time for work and unless they move they will be compelled to walk a distance of four miles. . .” (*Carbondale Leader*, October 31, 1899, p. 2)

The closing date for the Hudson roundhouse is confirmed in the biographical sketch, with photos, of Frank S. Clark in the September 1, 1936 issue of *The Delaware and Hudson Railroad Bulletin*, pp. 131-32. From that biographical portrait, we learn that

- the Yard Master at Hudson in 1886 was Milot Shiffer
- in the fall of 1886, two of the four engines at Hudson (the *James P. Dickson*, No. 23; the *J. J. Astor*, No. 27) were assigned to mine runs that originated at Hudson
- the roundhouse at Hudson had four stalls; it was situated on the approximate site of the car shops in Hudson in 1936
- the four locomotives that were kept at Hudson in 1900 were sent to Wilkes-Barre and the Hudson roundhouse was abandoned and eventually torn down
- the passenger train that left Wilkes-Barre at 5:25 A. M. with passengers, mail, and express for Carbondale arrived at Wilkes-Barre on the return trip at 9:35 A.M.

In Frank S. Clark's biographical portrait in *The Delaware and Hudson Railroad Bulletin*, we read:

"In 1886 MR. CLARK asked Yard Master Milot Shiffer, at Mill Creek, now Hudson, for a position as brakeman, and he was transferred to the Transportation Department just after the new steam locomotive railroad between that point and Wilkes-Barre was placed in operation. / That fall he became a locomotive fireman, working on the various mine runs which then originated at Hudson. Two of the engines then assigned to that service were the *James P. Dickson* and the *J. J. Albright* [probable mistake in article; No. 27 was the *J. J. Astor*; the *J. J. Albright* was No. 8], Nos. 23 and 27, which were kept in the four-stall roundhouse, situated on the approximate site of the present car shops. About 1900, these locomotives were sent to Wilkes-Barre, the old Hudson roundhouse was abandoned and eventually torn down. / In 1895 MR CLARK saw his first service as an extra engineer and in 1901 he was given a steady job on a mine run out of Wilkes-Barre. For a time, too, he was in passenger service, pulling the train which left Wilkes-Barre at 5:25 A. M. with passengers, mail, and express for Carbondale, and arriving at Wilkes-Barre on the return trip at 9:35 A.M. In later years he was frequently called upon to handle passenger trains between Wilkes-Barre, Scranton, Carbondale, and Nineveh, although he much preferred daylight mine- or Hudson-Yatesville pusher runs, which permitted him to spend every night at home. / For the past 35years MR. and MRS. CLARK, who have been married 54 years, have lived in their present home at 116 South Main Street, Parsons, now a part of Wilkes-Barre. They have six children: JOHN, a Delaware and Hudson trainman; Albert, an employee of The Hudson Coal Company. . . (p. 132)



## Oneonta Roundhouses and Turntables

The primary source for information on the D&H roundhouses at Oneonta is Jim Loudon, whose book, *The Oneonta Roundhouse*, was published in 1993. Jim Loudon, in his article titled "The Legendary Oneonta Roundhouse" in the May 2011 *Bulletin of the Bridge Line Historical Society*, p. 29-29, presents an excellent summary statement on the D&H roundhouses that were located in Oneonta in the nineteenth and twentieth centuries:

"On December 13, 1993, the remaining 16 stalls and machine shop of what was once the largest roundhouse in the world were reduced to rubble, as the former Delaware & Hudson Railroad's Oneonta, New York, engine facility was demolished to make way for an industrial park. . . / The roundhouse was the last of three in Oneonta, a major D&H terminal that also had the distinction of having the first hump yard (a switching yard on an incline) in the nation. . . / Oneonta was reached by the Albany & Susquehanna Railroad in 1865, and a crude engine house was moved there from Harpursville, New York, in 1868. After the famous Railroad War of 1869, when James Fisk and Jay Gould attempted to pirate away the line, the A&S was run by the governor of New York State until it was leased to the Delaware and Hudson Canal Company in 1870. An 11-stall roundhouse was completed west of the original structure in 1871, and was enlarged to 22 stalls in 1876. Five years later a second roundhouse of 15 stalls was constructed just north of the first to relieve the overtaxed facilities. . . . / [The 1906 Roundhouse] At the time of completion [May 1906], the roundhouse was larger than any previously constructed. With only three stalls missing from a complete circle (for one outbound and two incoming tracks) the building's diameter was 428 feet, and its circumference was 1,344 feet; one-and-three-quarter miles of track were under its roof. There were 52 stalls, each 80 feet long, and a 58 foot long inspection pit. Four of the stalls had drop pits for removing driving wheels. An annex contained the machine shop, storehouse, boiler room, oil house, and fan room for the hot blast (forced air) heating system. The turntable was 75 feet long, electrically powered, and of the balanced design. . . / . . The new roundhouse was formally inspected and accepted by the company in August 1906, bestowing on Oneonta the distinction of having the largest roundhouse in the world, a title that went unchallenged for more than a quarter century."

### The Oneonta Yard in 1877:

Don F. Firman began working for the D&H on September 20, 1877, as a trainman at Oneonta. In his biographical portrait ("Stopped Runaway Engine") that was published in the February 1, 1932 issue (pp.35-36) of *The Delaware and Hudson Railroad Bulletin*, we read:

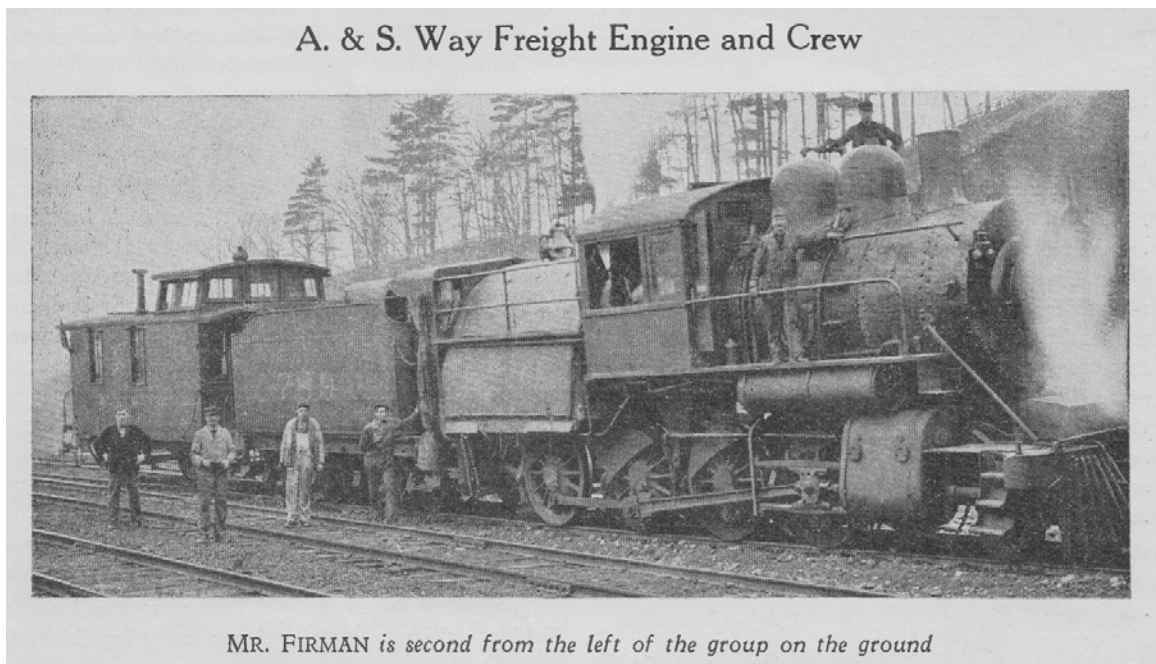
"Superintendent C. D. Hammond gave Mr. Firman his first position on the Delaware and Hudson as a trainman at Oneonta. He saw Mr. Hammond on September 19, 1877, and went to work the following day, making his first trip with engineman M. I. Dimmock on the 88, a Mogul, from Oneonta to Nineveh and return." (p. 36)

The Oneonta Yard and railroading in general at that time are described in Firman's biographical portrait as follows:

"In those days there were only two tracks in the Oneonta yard for southbound and three for northbound cars, in addition to a single freight house track. Yard switch engines were unknown; the crews made up their own trains. The largest cars were eight-wheel low-side gondolas carrying from 10 to 12 tons. Diminutive four-wheel 'Jimmy' cars carried only six tons, and 26 cars made a full train. / The 'Jimmies' had brake handles on the side, the brakes being set by pressing down on the lever. When the brake was set, a ratchet would catch. However, it took a wary brakeman to release the brakes without getting hit by the handle. / Mr. Firman was in charge of the first train to be double-headed northbound out of Oneonta. The regular conductor, when he heard that two engines were to be used, laid off. Although many railroad men doubted the practicability of double-heading, Mr. Firman's crew experienced no difficulty in handling the train. Today double-heading\* is the rule rather than the exception. Furthermore, ten modern cars will carry as much as 40 old-time 'Jimmies.' " (p. 36)

\* In the biographical portrait of William H. Mickle ("Lonesome Away From Engine") published in the February 15, 1926 issue (pp. 3-4) of *The Delaware and Hudson Company Bulletin* we read: "The practice of 'double-heading' did not come into vogue, to the best of his recollection, until 1878 or 1879."

Here is the photograph that accompanies the biographical portrait of Don Firman that is published in *The Delaware and Hudson Company Bulletin*:



## **The Two Roundhouses at Oneonta in the 1880s:**

**Elmer E. Kerr**, a Susquehanna Division engineer, who retired on pension on February 1, 1932, in his biographical portrait ("Locomotives Had Names") in the December 1, 1935 issue of *The Delaware and Hudson Railroad Bulletin* (pp. 179-80) said the following about the two roundhouses at Oneonta in the 1880s:

"There were two roundhouses at Oneonta then, one near the main track and another back toward the swamp. To reach the latter they had to go up the main track and back in over a long lead track; later it was arranged so they could run on the table of the big house, cross it, and run over a short connecting track to the other house." (p. 180)

**Thomas Monahan, Sr.**, a Susquehanna Division section foreman who worked at one time or another on practically every section on the Susquehanna Division and who at the time of his retirement on pension on February 1, 1933 was foreman of a section extending from Oneonta two miles north to Emmons Crossing, remembered (biographical portrait, "Sixty Years a Railroader," *The Delaware and Hudson Railroad Bulletin*, March 1, 1934, pp. 35-36) the old Oneonta yard and the two roundhouses there as follows:

"When Mr. Monahan went to Oneonta to take over a gang, his section, the entire Oneonta yard, extended from about the site of the new yard office to what is now Fonda Avenue, forming but a small mid-section of the present yard. Aside from the shop tracks and a few sidings, there were no yard tracks north of Fonda Avenue. / Two roundhouses and the car shops stood where only the latter are located today. The two roundhouses were so situated that to reach the second an engine had to be run on the table of the first, turned at right angle, run across an intervening track and over the turntable of the second, thence to the desired stall in the house. Both of these landmarks of the past have been removed since the more modern structure was built some distance south of the car shops." (p. 36)

In 1884, David A. Brimmer began working for the D&H as a wiper in the Oneonta roundhouse under Master Mechanic Thomas Howard. In Brimmer's biographical portrait ("He Wiped the Teekaharaway") published in the August 1, 1930 issue (pp.227-228, 237) of *The Delaware and Hudson Railroad Bulletin*, we read the following about the Oneonta yard:

"At that time there were two roundhouses at Oneonta on the approximate location of the present Car Department repair shops. To get into the 'new' roundhouse, as the one most recently erected was called, the engines had to be run on the turntable of the old roundhouse, make a half turn, and then run on the table of the new house. / When David went to work at Oneonta there were about 100 engines on the Susquehanna Division, each of which had both a name and number.



They never ran off their home divisions; Oneonta crews turned at either Binghamton, Nineveh, or Delanson./ . . . The locomotives of that day, most of which were Moguls, (2-6-0 type) would only haul twenty-two cars from Oneonta to Delanson—cars which were scarcely half the size of the ordinary rolling stock of today [1930]. Some of the locomotives then stationed at Oneonta were the *Binghamton*, *Phillip Hone*, *John Wentz*, *John Westover*, *Albany*, *Oneonta*, *Otego*, *Unadilla*, *Schoharie*, *Richmondville*, *Maryland*, *C. D. Hammond*, *R. C. Blackall*, and several with Indian names including the famous *Teekaharaway*." (p. 227-228)

The duties of a locomotive wiper in the 1880s are described in Brimmer's biographical portrait as follows:

"The life of a wiper was anything but pleasant in that day of the brass covered locomotive. He had to fill the sand boxes, fill and polish the kerosene headlight, and, 'shove down' the fire. By this is meant that, when a locomotive came into the house, half of the fire was pulled out, leaving just enough to keep steam on the engine. Then, when the locomotive was marked for its run, he would spread it out again and get the steam up on it so it would be ready to leave the house when the engine crew arrived. / Each wiper was equipped with a wad of white waste and a can of kerosene oil. The oldest wiper cleaned and polished the bright work—the guides, cylinders, and steam chest. The other wipers, ranging downward in order of seniority, were placed three on each side, and one underneath. Each of the wipers on the sides wiped one pair of drivers and the parts over them up to the running board. The man underneath cleaned the eccentrics, the inside of the wheels, the tank trucks, and the pilot. When the wipers had finished the foreman came around to inspect their work. Not infrequently he put his hand behind the wheels to make sure they were clean. If he found any black grease or dust the entire engine had to be wiped over again. The wipers took care of only those parts below the running board; the fireman cleaned the upper half of the boiler and the other parts on top. For this work the wipers received \$31 per month for twelve hours a day, with one day off a month." (pp. 227-228)



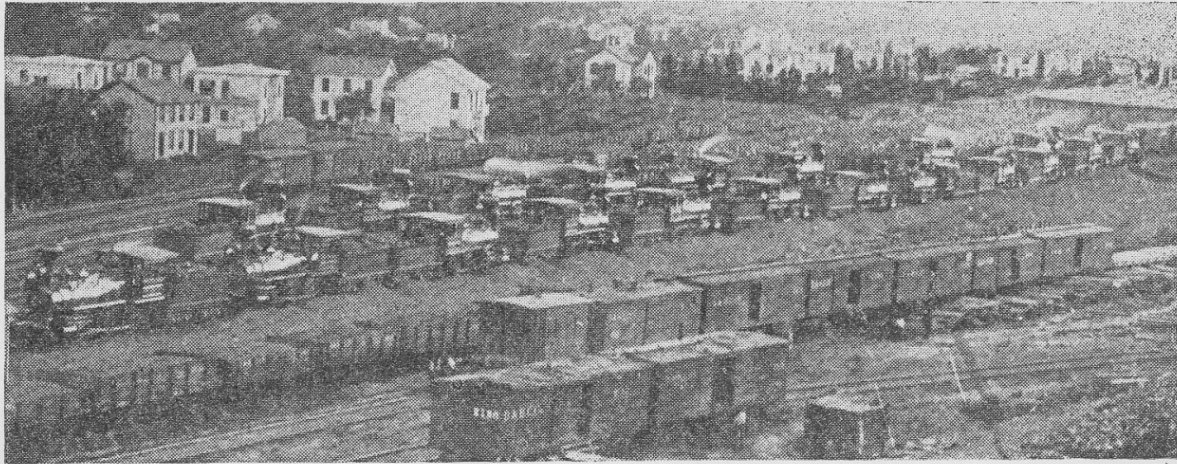
Broad Street Depot, Oneonta



Broad Street Depot, Oneonta, 1911, Doug Jester photo; posted on *Facebook*

*Oneonta Yard In 1884. (The Delaware and Hudson Company Bulletin, April 1, 1927, p. 102)*

## *Oneonta Yard In 1884*



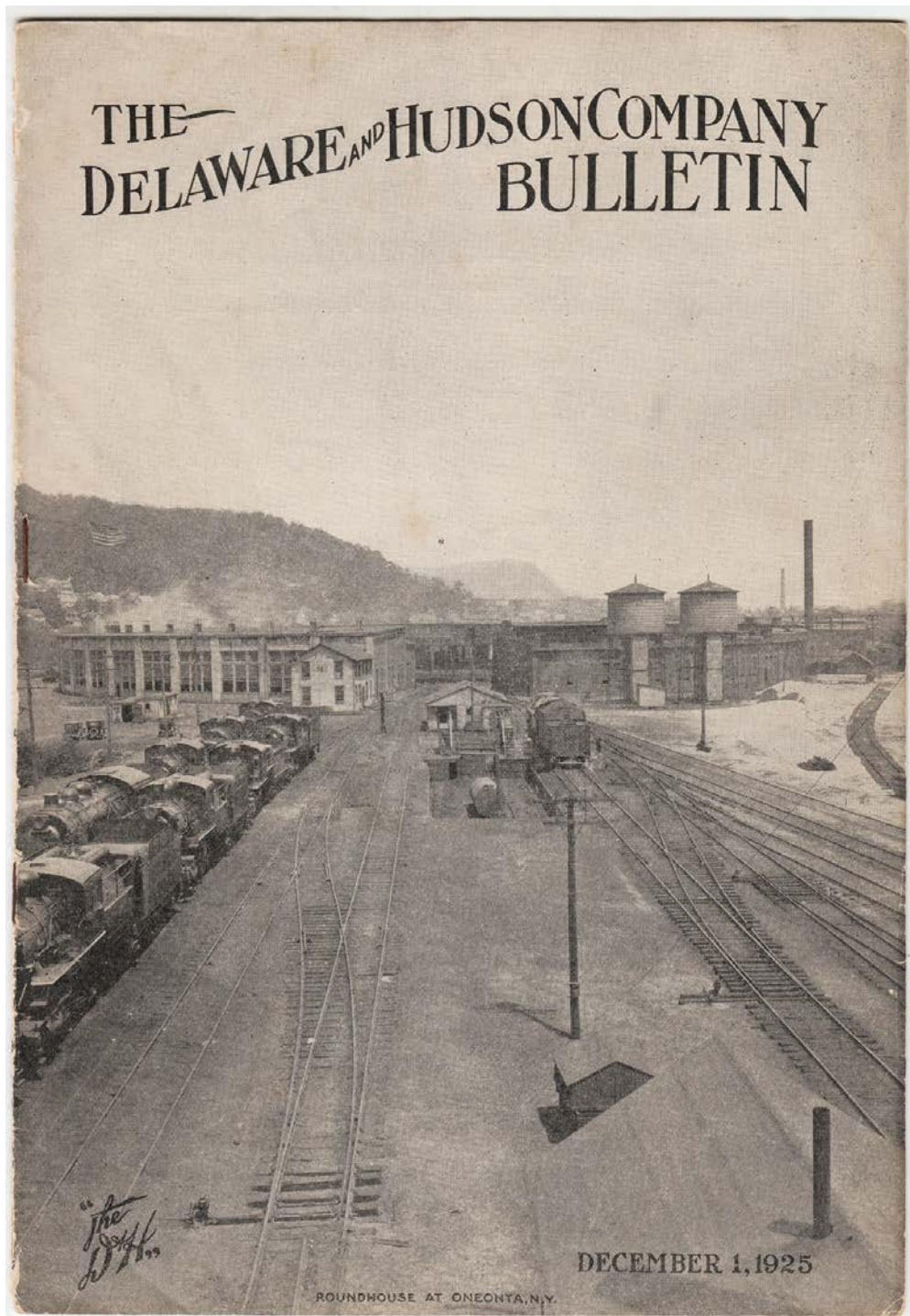
COURTESY CHARLES R. HARP, RETIRED CONDUCTOR

### **The 1924 Oneonta turntable:**

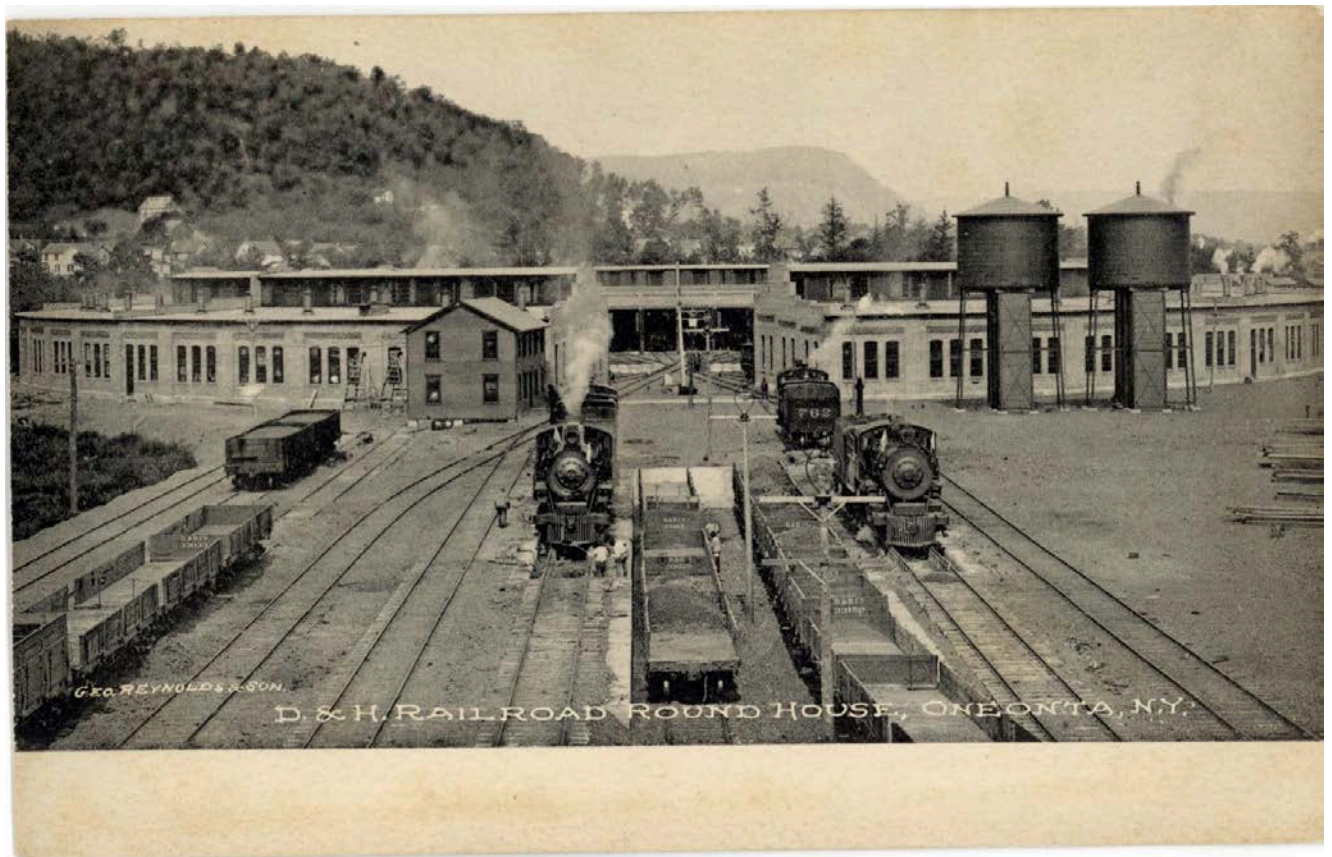
At Oneonta, January 7, 1924, a new 105-foot, three-point, twin-span turntable was installed, replacing a 75-foot center balanced turntable. This work was done in what was then considered record time. Only seven hours and thirty-eight minutes were consumed in removing the old turntable and installing and placing in operation the new table, and the Motive Power Department was deprived of the use of the engine house only ten hours and thirty minutes.



Here is a photograph of the Oneonta Roundhouse that is presented on the cover of the December 1, 1925 issue of *The Delaware and Hudson Company Bulletin*:



Given below is a post card view, by Geo. Reynolds & Son, of the 1906 Oneonta Roundhouse. This post card is in the collection of the Carbondale Historical Society.



In 1927 a new Yard Office was built at Oneonta. A photograph of the old yard office that was destroyed by a fire on January 13, 1926, and a photograph of the new yard office that was completed on January 31, 1927 are given in *The Delaware and Hudson Company INSPECTION of LINES :: JUNE 7, 8, 9, 1929*, p. 34). Here are those two photographs:

Oneonta Yard Offices, 1926 building and 1927 building:

*(The Delaware and Hudson Company INSPECTION of LINES :: JUNE 7, 8, 9, 1929, p. 34)*

*ONEONTA YARD OFFICE*



*DESTROYED BY FIRE JAN. 13, 1926*



*PRESENT OFFICE*

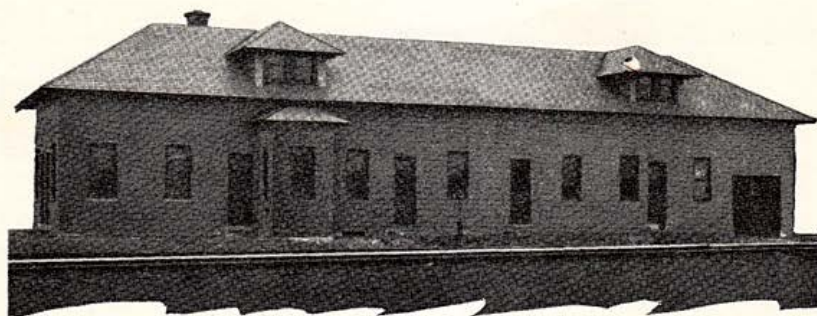
*CONSTRUCTION COMPLETED JAN. 31, 1927*



## 1927 Yard Office at Oneonta:

The following article about the 1927 yard office at Oneonta was published in *The Delaware and Hudson Company Bulletin*, April 15, 1927, pp. 119, 124-125.

*The Delaware and Hudson Company Bulletin*



Oneonta's New Yard Office

## Model Yard Office at Oneonta

*Structure Combining Modern Ideas Designed to Facilitate the Work of a Yardmaster's Force, Replaces Building Destroyed by Fire a Year Ago*

WHEN, on the evening of January 13, 1926, at 10:20 o'clock, fire destroyed the yard office at Oneonta, its occupants were very much disheartened. No matter how homely or out-of-date, or how vigorously the building may have been condemned by them because of certain inconveniences, it had long been the scene of their labors and, therefore, abounded with sentiment the ruthless removal of which they deplored. As years of service in any profession mount up there develops this growing attachment for the place where their many details have been consummated.

Fire or no fire, however, everyone knew that trains had to be kept moving. What was more, they had to be kept moving *on time*. Likewise, the great mass of detail paper work had to be kept up to the minute, multitudinous questions had to be answered with promptness, and much else had to be done with the same expedition and precision that always is exacted in such a busy place as a railroad yard. Well might the wise ones scratch their heads as they pondered their plight. A make-shift arrangement was the best that could be expected, and at 11:15 p. m., combination car No. 527 was switched to a track near the ruins and forthwith became the official "yard office," from which trains were dispatched without further delay. The next day coach No. 181 was added, and occupied by the yardmaster's

force, combination car No. 527 thereafter being used as the crew register room.

For a little more than a year, these improvised quarters were occupied day and night. Lack of space proved a discouraging handicap many times for one and all, but it was accepted in good part and the final results failed to reflect any evidence of it. Better times and a better place in which to work were forthcoming and with no little eagerness, longing eyes followed the movements of masons and carpenters as out of a grist of timber, concrete and other materials they fashioned a handsome building of a modern Roman design, the plans and specifications for which had been prepared in the Chief Engineer's office in Albany.

Monday, January 31, last, was moving day and J. W. NOLAN, general yardmaster, his corps of assistant yardmasters, clerks and other members of the force went about their task with light hearts. Starting at 8:57 a. m., it took them exactly three minutes to make the shift. In their elation they never gave second thought to the old coaches they were quitting; not a regret was heard. Instead, the newness, the commodiousness, the modernness, and the many splendid appointments of their new "home" alone occupied their attention. All of these they share, in part,

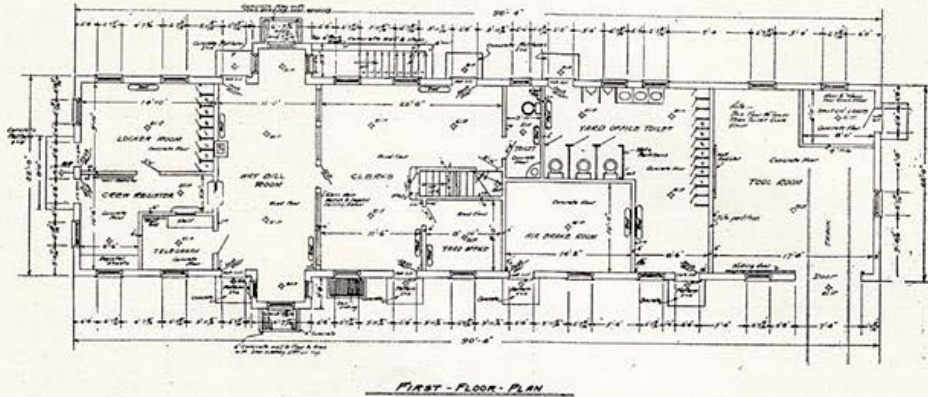
(Continued on Page 124)

15, 1927

one hundred and nineteen

## Model Yard Office At Oneonta

(Continued from Page 119)



with the Car and Maintenance of Way departments' yard forces.

Only a meager idea of the many splendid features incorporated in the building may be had from the accompanying photograph. It is a semi-fireproof structure, a story and a half high, with basement, and at the ground line measures 22 feet by 90 feet 4 inches. Its walls are of concrete blocks, 8x8x16 inches, with half-size and jamb blocks where needed. These are the standard product of the Chateaugay Ore and Iron Company at Lyon Mountain, and are colored in the block in accordance with standard Delaware and Hudson body and trim colors. Unfading Vermont slate, 10x16 inches, laid over one thickness of tarred roofing felt, covers the roof.

All wall footings and conduits are of concrete, 1:2½:5 mix. Likewise all floors on the ground level, with the exception of those in the Clerks' and Waybill offices which are of wood of double thickness, finished in maple and waxed, are of concrete, 1:2:4 mix, poured in a four-inch course on top of a bed of well rammed cinders and covered with a one-inch coat, 1:2 mix, trowled to a smooth surface.

Study of the floor plan will show just how well the space has been apportioned. The building parallels the main tracks and a transverse arrangement of the rooms affords an entrance from either side. The only exceptions to this rule are those of an entrance to the lamp room at the north end of the building and the entrances to the register room and locker room at the south end, all of which are from the ends of the building.

The extreme north end of the building is occu-

pied by the Maintenance of Way department as a tool room. Entrance is by a sliding door, 7 feet 4 inches wide, at the east side. A track for hand car use extends from near the main track through this entrance. Set off from this room by 4-inch tile partitions, and with the only entry from the outside at the end of the building, is the switch lamp room, 6x8 feet, of fireproof design.

Adjoining the tool room, is the lavatory and locker room equipped with twelve single tier steel lockers of the latest improved design and modern toilet facilities. A room, 14 feet 2 inches at the front of the building and 10 feet deep, has been set off, in part, from this section for the use of the yard air brake foreman.

The Clerks' room and Waybill room, separated by a partition the upper half of which is of glass to facilitate the lighting scheme, are next in order. The Clerks' room is 20 feet 8 inches on the west side and 11 feet 6 inches on the east side, the difference in space having been devoted to the General Yardmaster's private office which is 8x8 feet 10 inches. The Waybill room is eleven feet deep and its width is greater by two bay windows, 3 feet 8 inches over all, one on each side, than that of any other part of the building. The width of these projections is 6 feet 7 inches over all. Directly off this room, on the east side, is the telegraph office.

The south end of the building is divided into a locker room and a crew register room. Entrance to these is from the end of the building which arrangement constitutes a safety factor in that members of train crews in their haste may



not step from a doorway directly upon any track. Communication with the personnel of the Way-bill or Clerks' rooms, or with the telegraph operator, is carried on through two windows conveniently arranged in the register room and ample facilities for the preparation of reports and other paper work required of conductors are also available. The locker room is equipped with eight lockers that are exact duplicates of those in the lavatory room.

The basement contains the heating units, a hot water boiler and a smaller heater for use in connection with the tank that serves the lavatory rooms.

Stairs to the second floor which has been finished in keeping with the scheme of interior decoration and equipped as a record room, lead from the Clerks' office.

Cheery, indeed, are the offices. Large windows

admit a maximum amount of daylight, while for night use electric lights of sufficient voltage have been carefully arranged. All interior trim is of cypress finished in the natural wood, and all partitions and ceilings, which are covered with sheet rock over which two coats of hard wall plaster have been trowled, are painted in light contrasting colors. All plastered angles are protected by metal corner guards and generally an atmosphere of permanence prevails. New furniture throughout, window shades and other office accessories add their bit of attractiveness.

Everybody is proud of the building. Not alone is this confined to the office personnel, but admiration of it prevails among the yard and road crews and is expressed by all others whose work brings them there. A disposition to preserve its attractiveness-promises to make it a wholesome and pleasant place to work for years to come.



### *The Happy Force*

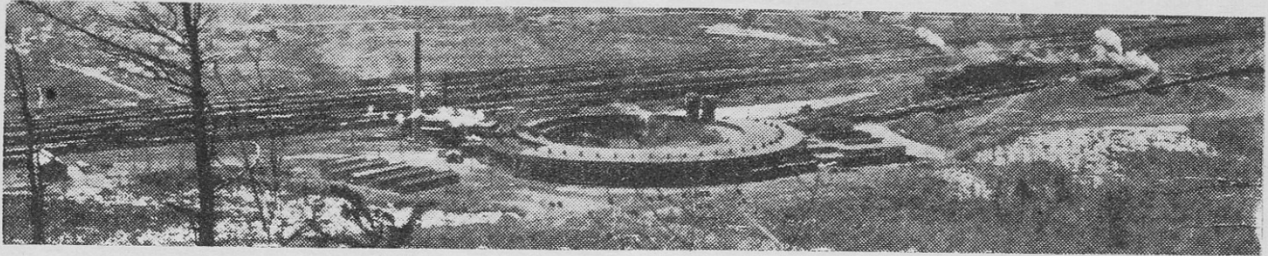
Front row (left to right)—Wallace A. Mahon, day yardmaster (north bound); Frank J. Nolan, record clerk; Lee L. Firman, location clerk; Roscoe Burdick, bill clerk; Edward J. Stack, yardmaster (Hog's Back); John W. Nolan, general yardmaster; S. Howard Sexton, night yardmaster (Hog's Back).

Second row (left to right)—J. Floyd Baldwin, day yardmaster (Fonda Avenue); Willard H. James, night general yardmaster; Joseph P. Gibbons, clerk; Harlow Bender, bill clerk; Carlos V. Perry, day yardmaster (south bound); and Fred Sinstack and Walter Perry, car checkers.

Back row (left to right)—James D. Johnson, night yardmaster (south bound); Floyd Cummings, reconsigning clerk; Herbert W. Schoonmaker, bill clerk; J. Henry Martial, telegrapher; Louis S. Darling, bill clerk; Kenneth D. Shaw, car checker; Winfred E. Brown, chief clerk; J. F. Boland, night yardmaster (Fonda Avenue); Thomas F. Buston, night yardmaster (north bound); Hammond Parish and Edward Chappell, bill clerks; and Jesse F. Collins, car checker.



*"Roundhouse and Yards at Oneonta, from 'The Rocks' "*(*The Delaware and Hudson Company Bulletin*, July 1, 1927, p. 210)



Roundhouse and Yards at Oneonta, from "The Rocks"

### **"Second Railroad Wonder Trip" 1936**

On Sunday, September 20, 1936, the New York Central, in cooperation with the Delaware & Hudson, ran its "second railroad wonder trip," from New York to Kingston, N. Y., Oneonta and Albany. Six hundred and fifty passengers paid \$4 for a ticket on this excursion. (The first "wonder trip" was run on November 17, 1935, and had about 500 passengers.) Those facts we learned from the article titled "700 'Fans' on an Excursion from N. Y." that was published in *Railway Age*, September 26, 1936, and reprinted in the August 2016 issue of the *Bridge Line Historical Society Bulletin* (pp. 26-33). In that article, we read:

"At Oneonta the Delaware & Hudson had its engine-house and shops ready for inspection, with a large force of supervisors on hand to serve as guides. In addition, a selection of freight, passenger and work equipment typical of the company's rolling stock, was on view. Among the locomotives displayed by the Delaware & Hudson were the experimental high-pressure 1400 class headed by the 'L. F. Loree.' Since the day was Sunday, the shops were not in operation, but the equipment was left with work in progress so that the visitors could see how operations were carried out. Incidentally, the extreme neatness of everything around the enginehouse, shops and store house made a deep impression on all. / The display at Oneonta was arranged under the direction of G. S. Edmonds, superintendent of motive power of the D. & H. and G. W. Ditmore, master car builder. / Leaving Oneonta, the trains proceeded to Albany (82 miles) on the historic Albany & Susquehanna line of the D. & H. through the Schoharie valley and the Helderberg mountains. One of the trains, to the delight of the passengers, was pulled by one of the D. & H. '600' class Pacifics, the appearance of which has been 'Anglicized.' At Albany, the trains were switched to the tracks of the New York Central for the return trip to New York, 142 miles. / Each of the trains was made of 10 cars—7 coaches, 2 dining cars and a Pullman observation car. One of the dining cars sold table d'hote meals (lunch at 75 cents and dinner for \$1) and the other dealt exclusively in sandwiches and light refreshments. Waiters also went through the coaches selling

sandwiches, fruit and coffee. . . In charge of the excursion for the Central was W. T. Gaynor, assistant advertising manager, and for the D. & H., W. J. Coughtry, recorder. Officers and employees of both companies accompanied the trip, having volunteered to act as guides, as did members of the shop force at Oneonta." (p. 27)

A number of pamphlets and other descriptive material, describing in detail the railroad, scenic and historical associations of the territory traversed, was given to each passenger. Among these was a 20-page illustrated pamphlet which, in addition to locomotive pictures, contained also detailed maps and profiles.

In one of those pamphlets is the following text (*BLHS Bulletin*, reprint, pp. 29-30) titled "THE ONEONTA SHOPS." Here is that text:

### THE ONEONTA SHOPS

ONEONTA is the headquarters of the Delaware and Hudson's Susquehanna Division, approximately 82 miles from Albany and 61 from Binghamton. The railroad is the principal industry of the community, giving employment to 1700 people. Freight runs from Mechanicville, Binghamton and Wilkes Barre terminate here, though passenger crews run through between Albany and Binghamton. The classification yard is used principally in connection with south and west bound movements, north and east bound trains being run through to Mechanicville solid wherever possible.

#### THE ROUNDHOUSE

The Wonder Trip Special will proceed direct to Oneonta roundhouse, the 105 - foot turntable of which serves 52 stalls arranged in a complete circle. Under the guidance of roundhouse supervisors the two drop pits

the Whiting Hoist, and the fully equipped, modern machine shop, which facilitate rapid completion of running repairs, will be inspected. The master mechanic's office, as well as those of the general foreman, engine dispatcher, etc., are all under the same roof. A distinctive feature is the automatic coal-fired stationary boiler. Ingenious use of an air-pump governor, a superheater damper valve and a spring switch makes it possible to regulate the supply of coal to the stoker as well as the air supply of the furnace so that the steam pressure fluctuates only 3 lbs. below the "popping" point of the safety valve without any attention on the part of the boiler room engineer.

#### DISPLAY OF DELAWARE & HUDSON LOCOMOTIVES

On a track north of the roundhouse will be found locomotives of the 900-, 1000-, 1100-, and 1200-classes, as well as the high pressure locomotives 1401,

1402, and 1403, which have been placed to facilitate photographing.

From the locomotives the party will proceed to the nearby car shops where an inspection will be made of the oil and waste reclamation plant, wheel shop, wood mill, coach shop, stripping yard, blacksmith shop, and the main shop. Heavy repairs to all open-top equipment, which includes 10,000 of the Delaware and Hudson's 14,250 freight cars, are made here. All heavy passenger car repairs, as well as car wheel mounting, repairing of air brake parts and reconditioning of brake beams are carried out at this point, as will be explained by a corps of guides selected from the supervisory force.

(p. 30)

### **Oneonta D&H Coach Shop:**

Frank Clark, who served as the Oneonta Coach Shop foreman for 27 years prior to his retirement on pension, June 1, 1936, worked, when a boy, as a farm hand in the Schoharie Valley on hops farms. In his biographical portrait in *The Delaware and Hudson Railroad Bulletin* ("Passenger Car Expert," November 1, 1936, pp. 163-64) we read:

"There was plenty of work for farm hands in the Schoharie Valley during the seventies and eighties. When Frank could be spared at home he hired out to plant, hoe, or hill corn; or to grub-hoe, plow, hill, or train hop vines. Hops, it may be explained, were 'trained' to grow to the top of 20-foot spruce, oak, cedar, or tamarack poles, as well as along twine strung between the poles which stood 4 feet apart each way. In September when the hops—leaf covered, burr-like growths—formed at the top of the vines, they were picked, dried, and packed in 200-pound bales. They were then sold to buyers who canvassed the territory each fall, the local farmers delivering them to the station of the then very busy Schoharie Valley Railroad. Later on the vines were cut from the poles and were burned as they were of no further value, while the poles were pulled up and stacked for the winter. All these operations gave work to many laborers in the hops field during the spring, summer, and fall months."

### **Oneonta D&H Paint Shop:**

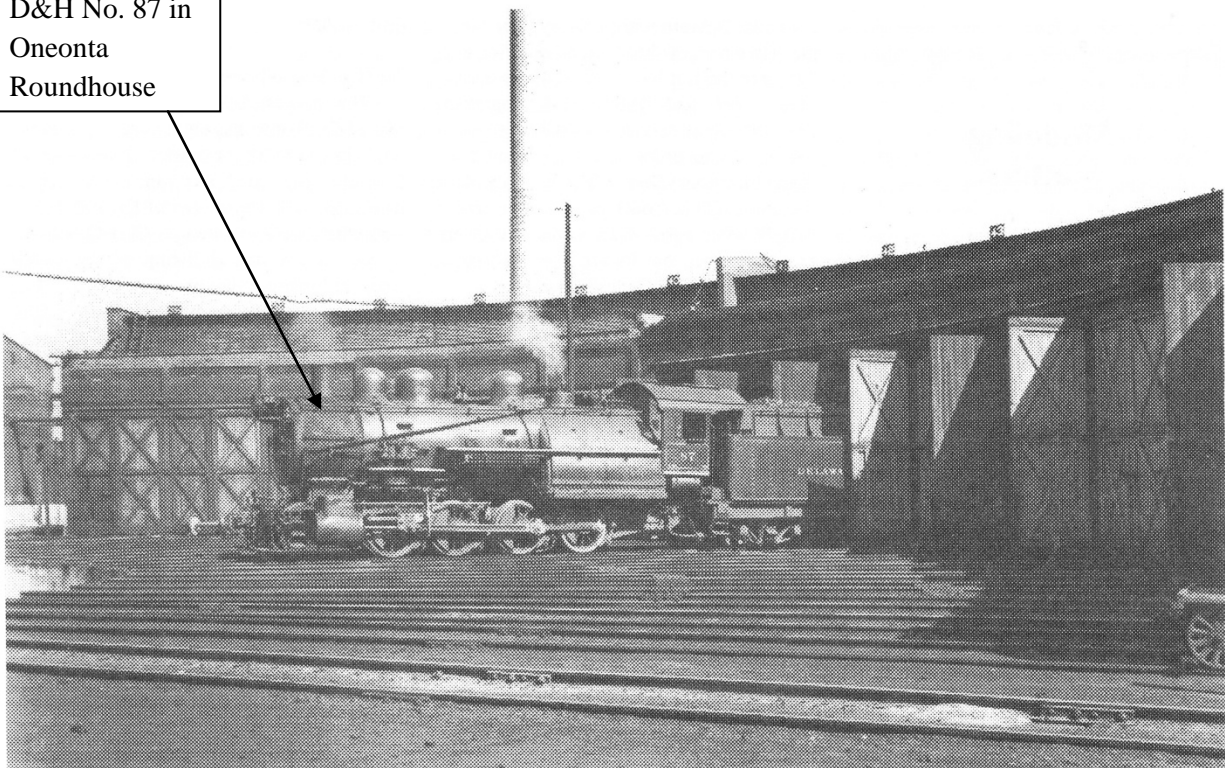
A new paint shop opened at Oneonta in 1962. That we know from the article titled "New Shop Triples D&H Painting" by Charles W. Donnelly that was published in *Modern Railroads*, May 1962, and reprinted in the *Bridge Line Historical Society Bulletin* of August 2016, pp. 20-22. Here are the opening paragraphs of that article:



“A new, modern shop is enabling the Delaware and Hudson to paint freight cars on a process-line basis the year around. / In the past, when the D&H painted its rolling stock out of doors, unfavorable weather restricted the road’s output to an average of 451 cars a year. Today, in the new shop at Oneonta, N. Y., the work is unaffected by rain, snow, heat, or cold—and the road sprays six cars every eight-hour working day, or 1500 cars annually.” (p.. 20)

In the *Bridge Line Historical Society Bulletin*, November 2015, p. 37, is presented the photograph with caption given below:

D&H No. 87 in  
Oneonta  
Roundhouse



"D&H Co. #87, a 0-8-0, from Chris Shepherd. This engine was built as D&H Class E-4 #1006 by Schenectady Locomotive Works (order #5868-2) in 1901, just before the formation of the American Locomotive Co. This engine was rebuilt into the 87 by the D&H in 1923, and not scrapped until 1951. We don't know the location, other than it's sitting partly outside its stall (42) at a roundhouse."

In the January 2016 *BLHS Bulletin*, p. 15, in the column "The Railroad Archaeologist" by Scott J. Whitney, we read the following about the photo given above:

"The photo at the top of page 37 [in the November issue] is most assuredly Oneonta. The camera is poised near the larger of the two openings between the east roundhouse and west roundhouse, and looking roughly Northeast toward the single track opening between them. The boiler room stack clearly towers over the locomotive."

Here is a photograph by Tom Biery of the diesel shop at Oneonta in June 1968. This photo was posted on the D&H Railroad group page on *Facebook* by Tom Biery on March 14, 2016.



*Diesel Shop, Oneonta Yard, June 1968*

**Oneonta Yard, after 1975:**

Two photos, downloaded from *Facebook* on February 3, 2015, of Oneonta yard from Richard's Crossing Bridge, taken after 1975:



*Oneonta Yard, after 1975*





*Oneonta Yard, after 1975*

### **The Oneonta Yard, 1977:**

The photo of the Oneonta yard given below is reproduced here from the February 2016 issue of the *Bridge Line Historical Society Bulletin*, p. 21. Here is the caption given there on this photo: "Two of the four D&H PA's roll past Oneonta FA tower with an inspection train (or maybe a fan excursion) on June 4, 1977. Photo by Roger Pugh, courtesy of Ben Martin."



Posted on *Facebook* about the Oneonta Yard:

“Prior to 1980, Oneonta was the main yard for the D&H. Every train that operated on the original D&H came through Oneonta. Oneonta was the throat of the railroad. Trains to and from Wilkes-Barre, Buttonwood and the Penn Division all came to Oneonta for classification. Trains for Mechanicville and Kenwood came there as well. The yard had a southbound receiving, classification yard, and advanced yard. Trains were received in the receiving yard, then sent over the hump to the classification yard and then moved to the advanced yard where the trains were made up. The advanced yard was as far south as Glens Bridge Road. There were almost 100 miles of track in the Oneonta yard. There was also a northbound receiving and classification yard as well as several smaller yards inside. Oneonta was the main car-shop for the railroad. The Diesel shop was at Fonda Avenue. The main brake, wheel, boxcar, and paint shops were at Oneonta. After dieselization the round house was no longer a vital part of the road. All but 16 of the 52 stalls were torn down. The remaining 16 were used by MOW. There was a public team track as well as an auto unloading track. There were numerous businesses that received freight at Oneonta.”

In the above paragraph we read:

“Trains were received in the receiving yard, then sent over the hump to the classification yard [emphasis added] and then moved to the advanced yard where the trains were made up. The advanced yard was as far south as Glens Bridge Road.”

**Hump yard:** Definition from Wikipedia:

Hump yards are the largest and most effective classification yards, with the largest shunting capacity, often several thousand cars a day. The heart of these yards is the hump—a lead track on a small hill over which an engine pushes the cars. Single cars, or a block of coupled cars, are uncoupled just before or at the crest of the hump, and roll by gravity onto their destination tracks in the tracks where the cars are sorted, called the classification bowl.

The speed of the cars rolling down from the hump into the classification bowl must be regulated according to whether they are full or empty, heavy or light freight, varying number of axles, whether there are few or many cars on the classification tracks, and varying weather conditions, including temperature, wind speed and direction. As concerns speed regulation, there are two types of hump yards—without or with mechanization by retarders. In the old non-retarder yards braking was usually done in Europe by railroaders who laid skates onto the tracks, or in the United States by riders on the cars. In the modern retarder yards this work is done by mechanized "rail brakes" called retarders. They are operated either pneumatically or hydraulically. Pneumatic systems are prevalent in the United States, France, Belgium, Russia and China, while hydraulic systems are used in Germany, Italy and the Netherlands.

In 1917 there were two hump yards at Oneonta. In *The Delaware and Hudson Company INSPECTION of LINES :: JUNE 7, 8, 9, 1929*, p. 22, we read:

"Two 'hump' yards are available [at Oneonta], one for eastbound and one for westbound traffic. Its importance [the Oneonta yard] is accentuated by reason of the location there of the car repair shops where the bulk of the freight car repair work and all passenger car major repair work or the entire railroad is carried on. The latter facilities were brought to their present state in June 1917."

Here are two Tom Biery photos of the Oneonta yard that he posted on the Delaware and Hudson Facebook page:



"Diesel Shop, Oneonta, NY. A beautiful June 1968 day. About 6 - 7 pm — in Oneonta, New York." Photo by Tom Biery.



*Oneonta Yard*, photo by Tom Biery:

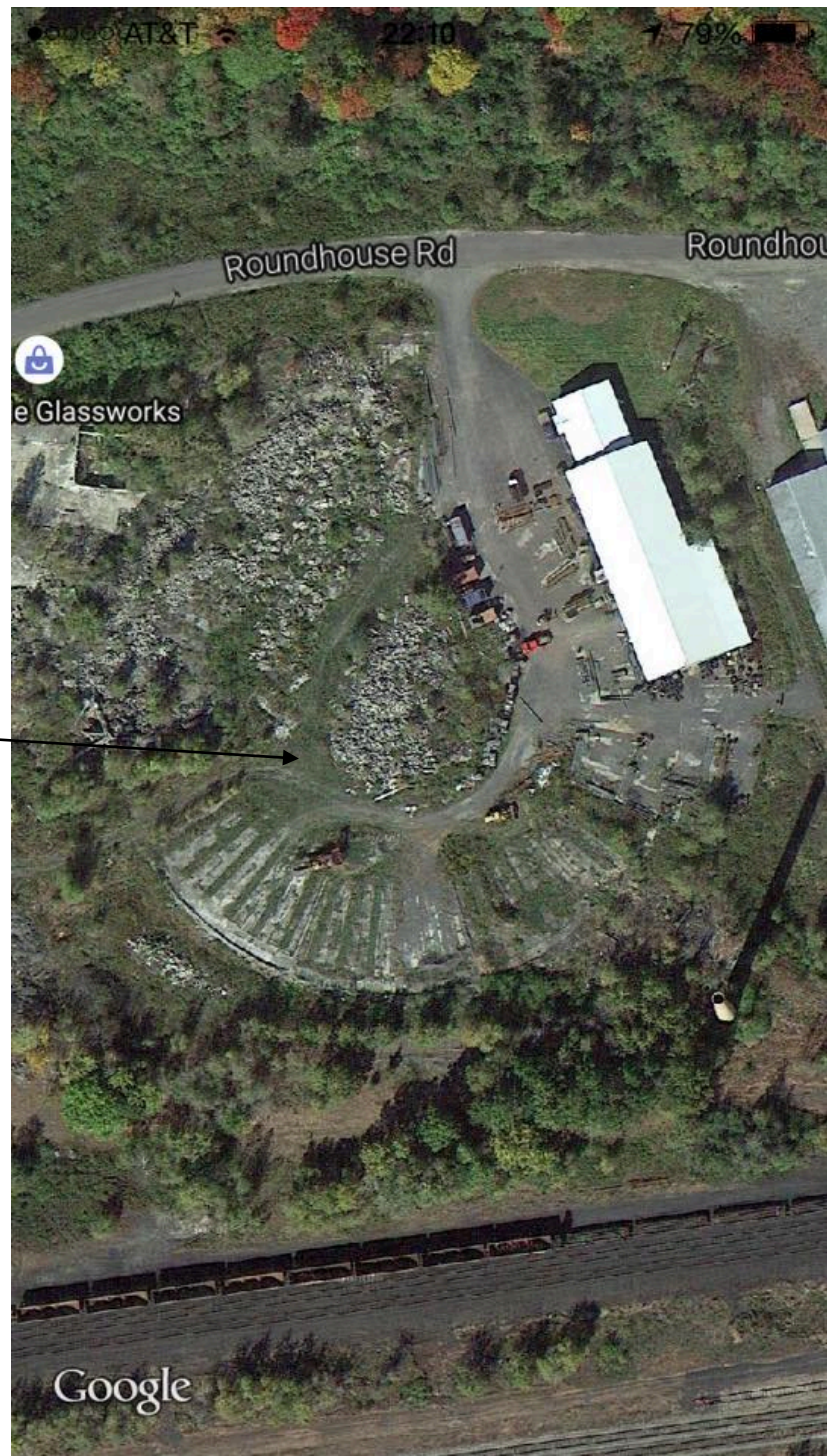


Michael Eggleston commented that same day as follows on the Delaware and Hudson *Facebook* page about the second of those two Tom Biery photographs and about the Oneonta yard in general:

“The 614 [in the photograph shown immediately above] is on the scale track, notice the gauntlet rails that allowed locomotives to pass over the scales without damaging the scales. The next tracks to the left were pretty much enginehouse and coaling leads back in the days when the roundhouse was in operation. Looking south just ahead of the group of cabeesee (plural!) is what was the northernmost (three or four tracks) small yard, which is probably how it got its name, the ‘Yukon’. Next to that was the Southbound Receiving Yard, Main 1 Southbound, Main 2 Northbound, and next over was the Northbound Receiving Yard. I often wondered why the Northbound Class Yard, was placed south of the Yard Office. But, the way traffic was handled was Northbound train generally pulled into the NB Receiving, and a yard engine would pull the cars down the Carbondale Lead (which went nowhere near Carbondale!) down to The Hogsback [“Hog’s Back”] (standard Oneonta witticism, ‘I didn’t know [the hog] left’) on the south end of the NB Class Yard, drill out the cars and then once cars were classified, would

shove them back up into the NB Receiving Yard or the Air Tracks for departure. On the Southbound side, yard engines would generally get on the north end of the SB Receiving Yard, and shove drags over the Hump. Back in the days when there were plenty of yard trainmen hump riders, the drags would be pushed over the simple, man-made hump (no retarders, all manual operation) and the cars would be classified into the SB Class Yard below the hump. It was all done with switch lantern and fusees prior to two-way radios, and I have heard reports that in the old days there may have been a hump signal on the River Street crossing bridge by the Yard Office for yard engineers' guidance. It was a good efficient operation until they started cutting the size of yard crews, and freight damage became a major problem with no one to ride cars to a gentle stop. Many a loud crash in the SB Class Yard could be heard at the Yard Office. At least one piggyback load of television sets for RCA in Scranton were destroyed when the car hit the standing drag. A similar fate plagued a carload of wine, the wine was actually running off the car, and guys were running down with buckets to pick it up for home consumption!. . . Lotta money went up the chute, and Oneonta started putting an engine switching on the south end of the SB Receiving Yard. You always had to be alert, especially at night when the engine was working right behind the yard office, if you didn't watch carefully, you might get hit with a drag of cars! I saw a road trainman knocking off hand brakes in an outbound train slip off the icy ladder and fall down between two slow moving cars and if there wasn't a burly car knocker who grabbed the man and yanked him back, he would have been cut in half for sure. Glory Days, even into the late 1980s. But once the Penn Division was torn up, Oneonta was in the wrong place on the railroad, and the D&H acquired the former DL&W/EL East Binghamton (Conklin) yard and Oneonta became superfluous. It slowly rotted away, and it's hard to imagine how busy the yard was in the 1970s, with usually four separate yard crews, two on each side of the mains, and an occasional transfer job to bring "rehandles" back and forth between the North and Southbound sides. In addition to road freights setting off and picking up, it was a challenge for any trainmaster or yardmasters to keep the freight moving efficiently. I am proud to say I worked Oneonta for nearly two years, worked with a lot of smart, knowledgeable train and yard office people, and I was impressed at how smoothly this giant yard operated, even while the D&H was having financial problems, mergers and being plagued with the Springfield Terminal which finally killed the D&H I knew. Sic Transit Gloria, ONEONTA YARD!"

The Oneonta Roundhouse site, as shown on Google maps, August 4, 2015:



Oneonta  
Roundhouse site,  
August 4, 2015



## Wilkes-Barre Roundhouse and Turntable

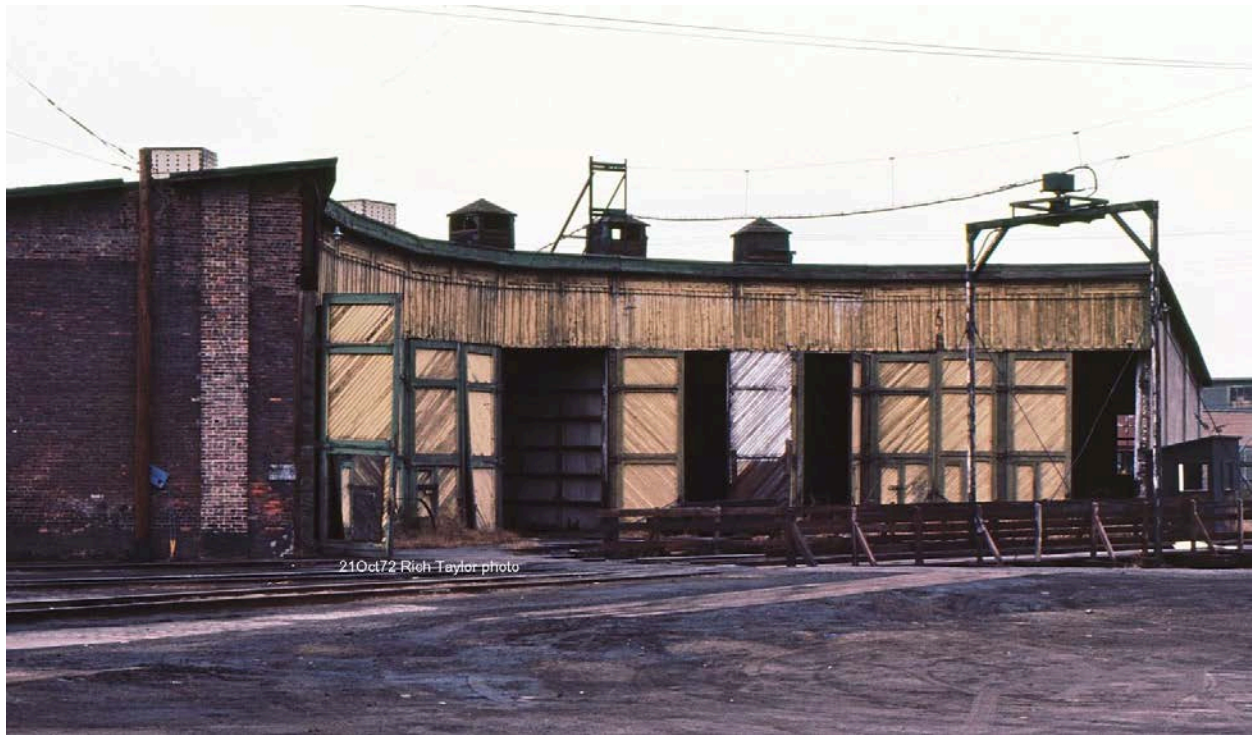
We have not been able to discover very much material on the D&H Wilkes-Barre roundhouse. We have learned that in the Wilkes-Barre roundhouse, in 1945, there were 9 stalls, and that the turntable there was 65 feet long.

Here is a photograph of the Wilkes-Barre roundhouse that is included in a family photograph album in the holdings of the Carbondale Historical Society. Handwritten on this photograph is the following: "5 - 8 - 28 / W Barre Round House."



Wilkes-Barre Roundhouse: equipped with a sixty-five foot turntable, and having nine stalls."

Here is a photograph by Rich Taylor, taken October 21, 1972, of the Wilkes-Barre roundhouse. This photo was downloaded from the Delaware and Hudson page on *Facebook* on March 23, 2015.



The D&H yard in Wilkes-Barre, we learn from the biographical portrait of Seth V. Colvin ("They Had No Caboose," pp. 259-260, October 1, 1932 issue of *The Delaware and Hudson Company Bulletin*) was located in the heart of Wilkes-Barre on the site of the former Lehigh Coal and Navigation Canal basin there. In that biographical portrait we read:

" 'Did you ever know that there used to be a canal terminal in what is now the heart of Wilkes-Barre?' asked Mr. Colvin, and then described the dam across the Susquehanna River at Nanticoke, eight miles below Wilkes-Barre, the locks at 'Butch' Ball's landing which permitted the boats to pass from the river into the [Lehigh Coal and Navigation] canal basin, located on the present site of our Wilkes-Barre yard. His crew delivered coal at the basin for emptying into canal boats to New York via the North Branch Canal [completed in 1834; linked the Wyoming Valley with the east-west Pennsylvania Main Line Canal, via Harrisburg, which provided an outlet to Philadelphia]."

In Volume XII in this series, on page 628, that is a map on which can be seen the North Branch Canal and the Lehigh Coal and Navigation Canal basin in downtown Wilkes-Barre.

Here is a photograph of the Wilkes-Barre yard, Scott Street, in 1966, now Wilkes-Barre Boulevard. This photograph by Bob Dankovitch was posted by Bill Christian on February 15, 2016 on *Facebook*.



The facilities and operations of the D&H at the southern terminus of the company, Wilkes-Barre, are described in Part I of a two-part article on Wilkes-Barre, commonly known as the City of the Black Diamond, in the May 15, 1929 issue (pp. 149-151, 158) of *The Delaware and Hudson Company Bulletin*, as follows: "To form a picture of our facilities in the city [of Wilkes-Barre] let us begin with the railroad yard at that point. The Wilkes-Barre yard has five house tracks, holding an average of eighty-eight cars, ten classifying tracks, allowing for the classification of one hundred and thirty cars, three receiving tracks from the Central Railroad of New Jersey to hold about one hundred cars, and two delivery tracks holding about forty-five cars; in addition there are ash, coal, caboose, coach, and storage tracks at Jackson Street. To provide for storage and minor repair work to locomotives, there is a roundhouse equipped with a sixty-five foot turntable, and having nine stalls."



**D&H Canal Part I**

(Part II in Volume XX; Part III in Volume XXIII)

**The Delaware & Hudson Canal**

The material presented below is not intended as a comprehensive history of the D&H Canal. Rather, it is a compendium of data about the D&H Canal that we have gathered on our D&H Canal Company journey that focuses on the D&H railroad in the nineteenth century.

The D&H canal, unlike the Erie Canal and a great many early-nineteenth century canals, was privately funded (with two loans from the state of New York required in order to complete the canal). Construction of the D&H canal was begun before the Erie Canal was completed. While work on the Erie Canal was nearing completion, Maurice Wurts persuaded its chief engineer Benjamin Wright to send two of his assistants (Colonel J. L. Sullivan and John B. Mills) to assess the projected D&H route. In addition to serving as an academy for the first age of American internal improvements, the Erie Canal set dimensional and operating standards, so that a certain uniformity of practice developed on all American canals. Building the Erie Canal was the nation's first practical school of civil engineering.

The Erie Canal exploited the only low-elevation passage through the eastern mountain chains between Georgia and Canada. It was the first reliable, inexpensive way to carry heavy, bulky cargo between the Great Lakes and the Atlantic seaboard. It was 363 miles long and was built between 1817 and 1825. On it, 83 stone-walled locks lifted and lowered boats a total of 675 feet. The canal was initially 4 feet deep and 40 feet wide at water level and 28 feet wide at the bottom. The locks were 90 feet long, 15 feet wide, with boat capacity 35-45 tons. At Rome, NY, there was a 58-mile long level over the drainage divide. October 26, 1825: The Erie Canal was officially opened. The Canal cost \$7,000,000 to build. Most interestingly, construction of the D&H Canal began more than three months before the opening of the Erie Canal.

Passengers traveled from Albany to Buffalo in comfort in 5 days (not two weeks in stagecoaches). With the opening of the Erie Canal, freight rates fell 90 percent, compared to shipping in ox-drawn wagons. The Erie Canal was enlarged in 1862; the Barge Canal was authorized in 1903 and completed in 1918.

**Boat/Barge:** The great majority of vessels that carried freight (coal, lumber, cement, and a multitude of other products) on the D&H Canal from Honesdale to the Hudson River, vessels on which the canal workers and their families lived during the months when the canal was in operation, were "boats," and they were referred to as such by their owners and by the D&H.

In an article about the Delaware and Hudson Canal Company that was published in the August 23, 1877 issue of the *Honesdale Citizen*, we read the following about the maritime equipment owned by the D&H at that time:

"The equipment of the [D&H] canal at the close of the last fiscal year consisted of 915 canal boats, 66 transfer boats, 3 freight line boats, 16 barges, 2 wrecking boats, 1 propeller dredging machine, and scows."

In the nineteenth century, barges rarely, if ever, served the double function of freight vehicles/residences. At the present time, some barges have been converted into luxury residences and no longer function as freight transport vessels. In the nineteenth century, barges were freight vehicles that were held together with rigging, and were collectively called 'the tow,' and were pulled by a towboat, on which the captain, pilot, and crew lived.

Most of the D&H coal at Rondout was transferred to Hudson River barges (that were pulled by tow boats) and sloops, which were significantly larger than canal boats, and taken down to New York and elsewhere. Most of the Hudson River boats were not owned by the D&H.

Ultimately the D&H operated several sea-going barges of 500 to 600 tons capacity, seven of which were named *Rondout*, *Stattdburgh*, *Troy*, *Honesdale*, *Carbondale*, *Scranton*, *Binghamton*. (*Wakefield*, p. 196)

When the water was let into the Erie Canal from Lake Erie, the news was flashed from Buffalo to New York City by a row of cannons, about five miles apart, which were fired as rapidly as possible, one after the other. The first canon was fired at Buffalo at ten o'clock in the morning; the last was fired at New York at half-past eleven. In an hour and a half, the sound had traveled over 500 miles. [The sound of a gun will travel a mile while you are counting *five*; electricity will travel a thousand miles while you are counting *one*.]

Construction of the D&H canal was begun in April 1827, and it was completed over its 108 miles of length in the autumn of 1828. At the height of building activity on the Canal, there were no fewer than 2,500 men and 200 teams of horses at work constructing the Canal.

At Rondout, one is roughly equidistant from Honesdale and New York City.

A blank copy of a D&H contract (specifications) to construct a portion of the D&H Canal is given in *Lowenthal* on pp. 50-51. Lowenthal reproduces the contract from an original in the Wurts Papers in the Hagley Museum & Library, Wilmington, DE. It is remarkable that a signed contract has not come down to us through the families of one of the builders of a portion of the D&H Canal.

A copy of “Specifications on the manner of building Locks on the Delaware & Hudson Canal” is presented in *Lowenthal* on pp. 54-55. Lowenthal reproduces these specifications from an original in the Wurts Papers in the Hagley Museum & Library, Wilmington, DE.

## 1828

From an article published in the *Utica Sentinel* in May 1828 (and reprinted in the *Dundaff Republican* of May 8, 1828), we learn that the water was let into the D&H Canal at that time:

“*Delaware and Hudson Canal.* / The public will be pleased to learn that the water was let into the Delaware and Hudson Canal from river to river, and that a number of rafts came down. Boats are now constantly plying on various parts of it, and the works are in fine order throughout—the banks bearing the water well. / A gentleman who lately passed down the line from the mouth of the Lackawaxen states, that nine-tenths of the work on the Delaware is done. On the Lackawaxen the greatest activity prevails, and the prospect is favourable for getting down some thousand tons of coal this season. This intelligence, we venture to say, will afford the greatest satisfaction to those who take an interest in the prosperity of that system of Internal Improvement, which has elevated the character and signalized the energy of the State of New York.—*Utica Sentinel.*” (*Dundaff Republican*, May 8, 1828, p. 3)

**D&H Canal, 1828 Configuration:** 4 feet deep (not arrived at consistently until 1832), 32 to 36 feet wide at the water line, 20 feet wide at bottom; designed for boats carrying not more than 30 tons; locks 75 feet in length and 9 feet in width; designed to transport 100,000 tons of coal a year.

From tidewater the canal steadily ascended for thirty-five miles; then its course was level for slightly more than sixteen miles. It then descended fifty-eight feet and rose again thirty feet, all in Orange County, and re-entering Sullivan County ascended steadily for the remainder of the distance in New York. After entering Pennsylvania, it ascended continuously to Honesdale, where its altitude was nine hundred and seventy-two and one-half feet. There were 16 feeders into the Canal.

There were 137 bridges (truss bridges with vertical planking enclosing the water-filled sides and bottom and raised on stone piers and abutments) over the D&H Canal.

There were 110 locks (13 cut stone, 95 rough stone with wood lining), having lifts ranging from 8 to 12 feet, the average being 10. These locks, initially, were 75 feet long and 9 feet six inches wide; later enlarged to 90 feet by 15 feet. In NY there were 72 numbered locks, 1 guard lock on route, 1 guard lock on Delaware River feeder. In PA, there were 34 numbered locks, 1 guard lock, 1 twin lock



In July 1828, the D&H Canal was opened from Kingston to Port Jervis:

*“Delaware and Hudson Canal.*—By advertisements in this paper, it will be seen that the boats on the Canal are now in successful operation between Kingston on the Hudson, and Port Jervis on the Delaware. There is also a regular line of vessels from the different docks in the city of New York, to the intersection of the Canal upon the Hudson near Kingston. / The freight from New York to Kingston, is no more than from New York to Newburgh. The works on this Canal upon the Pennsylvania side of the Delaware, are in rapid progress. A great number of workmen are employed at present, and more are wanted.” *“Northern Eagle.” (Dundaff Republican, July 17, 1828, p. 3)*

The existing histories of the D&H canal all give October 16, 1828 as the opening date of the canal. In the *Dundaff Republican*, however, of November 6, 1828, p. 2, we read that “the Canal is complete and will be ready for navigation on the whole line in the course of the ensuing week.” The D&H’s railroad, we learn from that same article, “is in a state of forwardness, and will be finished the present season.” Here is that article:

*“The Hudson and Delaware Canal.*—It will be perceived by the interesting letter [in the *Albany Argus*] of the President of the Hudson and Delaware company, that the Canal is complete and will be ready for navigation on the whole line in the course of the ensuing week; and that the Rail Road from the termination of the coal mines, is in a state of forwardness, and will be finished the present season. The managers deserve the highest praise for the industry and fidelity with which this great work has been conducted to a successful completion—a great public enterprise effected chiefly by private means: and great in its rapid and perfect execution, in the magnitude of the expenditure, and in the importance of its results. The company have the best wishes of the community that profitable returns may follow their large investments.—[*Albany Argus of last week.*” (*Dundaff Republican*, November 6, 1828, p. 2)

In the *Dundaff Republican* of December 18, 1828, we read the following astonishing notice:

“We have the pleasure to state, that the Delaware and Hudson Canal is now in successful operation, between Honesdale and its junction with the Hudson. It is expected that the Rail Road from Honesdale to Carbondale, (at the Coal Mines) a distance of 16 miles, will be in successful operation early in the Spring.” (*Dundaff Republican*, December 18, 1828, p. 3)

## 1829

On Monday, May 4, 1829, water was let into the Canal from Kingston to Port Jervis:

*“Delaware and Hudson Canal.*—We are informed that the water was let into the Delaware and Hudson Canal on Monday the 4<sup>th</sup> inst., and that it is now navigable, and goods are transported on it from Kingston, on the Hudson, to the Delaware River.” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, May 14, 1829, p. 3).

From that same issue of the paper, we also learn (p. 3) that “. . . The bid granting the credit of the state of New York, to this company (“DELAWARE AND HUDSON CANAL”) for the loan of \$300,000 has become a law.”

In June 1829, the D&H Canal was recognized as valuable for New York City, especially as a means of transporting fuel (firewood, coal) there:

*“Delaware and Hudson Canal.*—Great activity prevails on this Canal. According to a statement in the *Ulster Sentinel*, the number of arrivals at Eddyville, (tide water) during the week ending 18<sup>th</sup> ult. was 110 boats and 106 rafts; clearances, 112 boats. The advantages of this Canal to our city [New York City], we anticipate, will be very great.—Last season we received upwards of 20,000 cords of wood through this channel, which otherwise would not have been brought. During the present season, it is expected that large quantities of coal will be forwarded.—*N. Y. Jour. of Com.*” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, June 4, 1829, p. 2)

**June 1829:** Canal boats now operating from the Narrows of the Lackawaxen to the Hudson River; entire canal to be opened in July; rail road soon to be completed. In 1813 a post office was established at the Narrows of the Lackawaxen, with William Kimble, postmaster:

“We are informed by a gentleman from the Delaware and Hudson Canal, that the Boats are now plying from the Narrows of the Lackawaxen to the Hudson river. It is expected that the whole line of the Canal will be in successful operation early in July, and in addition the Rail Road will soon be completed.—When we anticipate that many of the curious will be gratified by a steaming ride on dry land; it is reported that the greatest possible order prevails throughout the whole line of said Canal, nay! we are even told that there is but one solitary Grog shop kept by a lock tender upon the whole line, and that is to die a natural death soon.” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, June 25, 1829, p. 3)

**July 21, 1829:** Water was let into the Canal at Honesdale on July 21, 1829, and the boat *Amelia* (fitted up by Joseph Kellogg) was ready for passengers and freight from Honesdale to Kingston. About 70 ladies and gentlemen went for a 10-mile excursion (tea and other refreshments were served) on the Canal and back to Honesdale. This must surely be the grand opening of the D&H

Canal at Honesdale (even though the canal was “officially” opened, the previous fall, on October 16, 1828; it was declared complete and ready for navigation on November 6, 1828).

Article “*For the Republican*” in the *Dundaff Republican, and Canal & Rail Road Intelligencer* of August 13, 1829, p. 2. Article in two parts: part one headed: “HONESDALE, July 21, 1829”; part two headed and dated “*July 23.*” This article is not only a toast to the D&H but also references the arrival of the Stourbridge Lion in Honesdale on July 23, 1829. Here is the first part of that article:

“*For the Republican.* / **HONESDALE**, July 21, 1829. / *Mr. Editor*—Permit me through the medium of your useful paper, to make known some of the passing events of the day at this place. Tuesday being the day appointed for letting the water into the Canal throughout the line [emphasis added; water was let in on at least part of the canal on May 4, 1829]; the boat *Amelia* of Honesdale, fitted up by Joseph Kellogg, and to ply from this place to Kingston for passengers and freight, took on board at the Basin, between sixty and seventy gentlemen and ladies for an afternoon excursion; the canal being in good order and the weather fine, we started off in handsome style with good music on board, at the rate of about five miles per hour. / I being a York State man and used to navigating the Erie canal, I was surprised to see with what skill and activity they managed boat; I found the boat turned easier than on the Erie canal, and passed the locks much quicker, it taking only from two to three minutes to pass a lock, passing down about nine miles, the boat was turned about in a natural Basin, they being very frequent on the way, she made speed back about as fast as she went down, the water having acquired a greater depth. After returning about ten miles and I being on deck was surprised to hear the call below to come and see, but went down; and behold, there was a table spread the whole length of the cabin, 40 feet in fine style; we sat down and took a good cup of tea and other refreshment, and finally returned in the evening well pleased with the whole performance. I cannot quit this subject without giving captain Kellog great praise for his attention and preparation on this occasion; he has taken particular pains to fit up a boat for the public good, and I wish him success in the enterprise. I must give praise to the superintendants, overseers, & lock tenders, in their unremitting exertions to facilitate the passage of boats without delay. / The Canal and Rail Road will be visited this season by thousands, to view the most stupendous and gigantic piece of improvement in America. [emphasis added] There are now two packet boats building and will be ready for passengers within four weeks. After the performance of the day, the following toasts were prepared but not drank for want of time, / 1. The Delaware and Hudson Canal Company—Persevering in their improvements, may they reap a rich reward/ 2. The Canal—May its banks be as permanent as the hills and mountains from which they are made. / 3. Raftsmen’s rites—Although they have necessarily been intruded upon, yet we hope by the exertions of the superintendants for the Company, they will speedily be removed. / 4. The Village of Honesdale—While she makes shure [sic] market for the surplus produce of the husbandman, may she increase in population and wealth and appear to the new world like a city on a hill. / 5.



The Farmers—While the harvest disappears before them, my they reap a rich harvest and supply us with provisions at fare market prices. / 6. The villagers of Bethany—They show a proper spirit of improvement to rise with Honesdale; success to them. / The upper and lower villages of Honesdale—May they ever consider it their interest to be united. / 8. The Rail Road—Although made of the common timber of the forest, may it prove as durable as the Cedars of Lebanon. / 9. Carbondale—She out strips the wind, we say success to her and pass on. / 10. The Stowbridge [sic] Lion—May she travel over the Lachawaxen [sic] hill and Moosiac [sic] mountain with her train of young, without leaving a track behind. / 11. The Rail Road—May it never bend or tremble at the appearance of any Lion of foreign import: three cheers. / 12. The boats—While they bring us Plaster and Lime to enrich our land, they facilitate the conveyance of our surplus produce to market. / 13. The Ladies—Virtue, wit and beauty combined, they give a new impulse to the heart; may they never refuse the hand of the temperate industrious young man—three times three.”

Here is the second part of the article:

“*July 23.* / The boats begin to arrive with the Travelling Engines [note the plural, *Engines*] and Rail Road machinery, all is bustle and business. The engine intended for this end of the road is plain stout work of immense height, weighing about seven tons, and will travel four miles per hour, with a train of 30 to 36 carriages loaded with two tones of coal each; the engine is called the Stowbridge [sic] Lion, its boiler being built some thing in shape of that animal, and painted accordingly; now imagine to yourself the appearance of that animal, the body at least twelve feet in length, & five in diameter, travelling at the rate of four or five miles per hour, together with a host of young ones in train, and you will have some idea of the scene before us; but the enchantment is broke, and in a few days the whole will be set in motion, and we would now give you notice, that when the whole is in operation we shall give a general notice that we intend to hold a day on rejoicing on the completion of the same, and shall give a general invitation to our fellow citizens to attend. We have procured a large cannon and intend to station it on the top of the high peak to sound on the occasion. I am growing tedious and will close the subject. Yours with respect, / *A Strict Observer.*” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, August 13, 1829, p. 2)

In mid-September 1829, “six or eight boats arrived at Honesdale, in the course of a few hours, with merchandize, &c.”

“*Hudson & Delaware Canal and Rail Road.* / We were informed by a gentleman, direct from the Canal and Rail Road, that the Boats were in a successful train of operation, that six or eight Boats arrived at Honesdale, in the course of a few hours, with merchandize, &c. [emphasis added]/ He also stated that the Cars were in a beautiful train of operation upon the Rail Road: that the difficulties recently attending the operation of the Locomotive Engines; were principally

remedied; so much so, that no fears are entertained relative to the ensuing season. / The Engineers safely calculate upon transporting one hundred Tons of coal upon the Rail way this fall. / It is said that within a few days, new life, and many smiles are the sure marks of a successful experiment.” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, September 17, 1829, p. 3)

Correction to above article by the editor of the Dundaff paper:

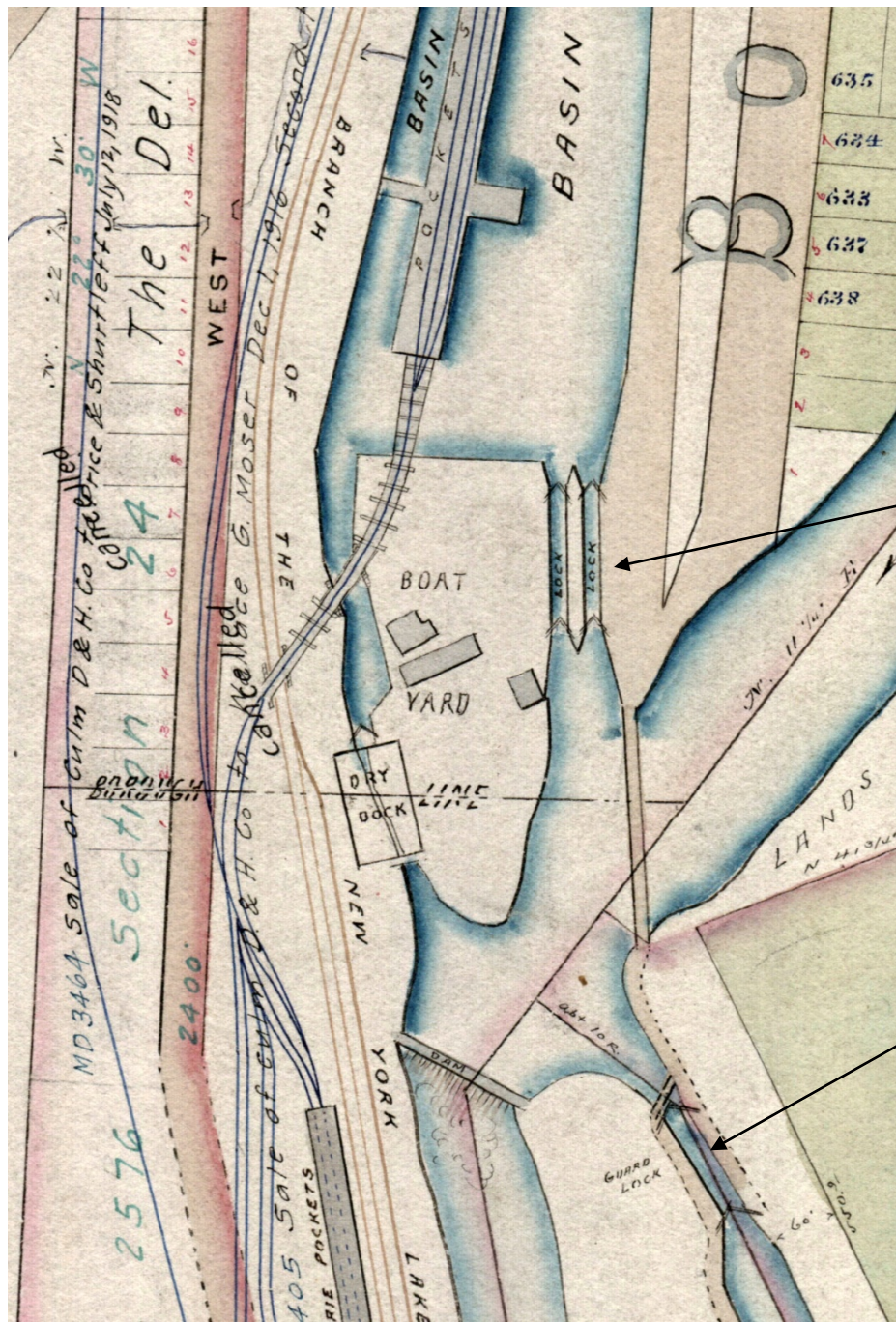
**“HUDSON AND DELAWARE CANAL AND RAIL ROAD.**—Under this head, two weeks ago appeared a statement, in which it was confidently expressed; that the Company’s prospects were brightening but thro a mistake the amount of Coal which would probably be transported in cars to the Canal; was reported at 100 tons: it then should have been 10,000 tons. / As we made a typographical error then; it we do err again, it shall be an error of the head, as we are confident from present observations that 20,000 tons may be transported upon the Rail Road by the 15<sup>th</sup> of December. If the operations should be attended with probable success.” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, October 1, 1829)

In early November 1829, four sloops loaded with “Lachwanna Coal” arrived in New York City, “the quality of which is very fine, and well worthy the inspection of the public, as is also the railway which Mr. D. has erected for the discharge of coal from the vessels.”

*“Lachawanna Coal via the Delaware and Hudson Canal, is now coming forward in considerable quantities. Four sloops loaded with it have arrived [in New York City] within the last five days, at the premises of E. Dunscomb, near the foot of Walnut street Ferry; and where there is now discharging from one of the sloops 160 tons, the quality of which is very fine, and well worthy the inspection of the public, as is also the railway which Mr. D. has erected for the discharge of coal from the vessels.—N. Y. Mer. Adv. “* (*Dundaff Republican, and Canal & Rail Road Intelligencer*, November 5, 1829, p. 2)

### **Double Locks at Honesdale:**

The first locks out of Honesdale, on the lower basin, were double locks (the only set on the entire system), numbered 37 and 38, where the loaded and empty boats moved together on the canal. These two locks are shown to the right of the words “BOAT YARD” on the map (from Gravity Railroad map volume) given below. Just below those two locks and to the right is the towpath bridge (bisected by the Borough Line on the map) over the Lackawaxen River; the tow path continues down to the Guard Lock and then along the Canal itself.



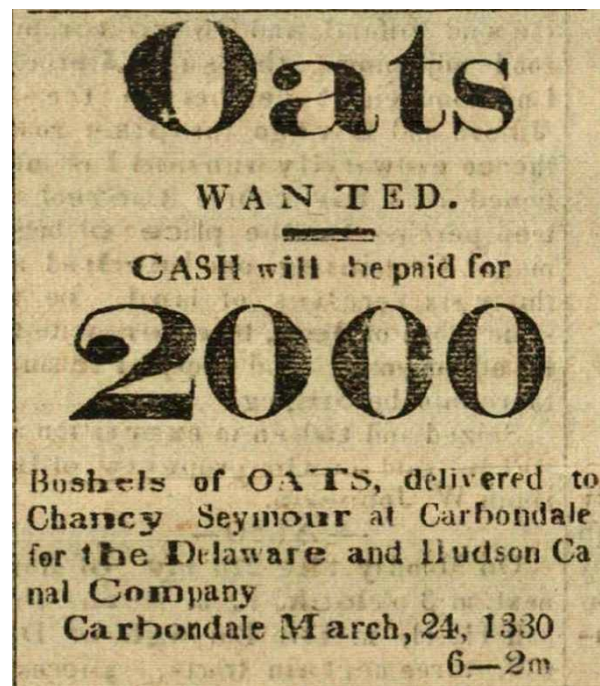
Locks 37 and 38 on the D&H Canal

Guard lock at the beginning of the Canal



## 1830

The ad (“Oats Wanted”) given below is from the *Dundaff Republican, and Canal & Rail Road Intelligencer*, March 31, 1830 p. 3. The D&H Canal Company needed these oats to feed the horses and mules that worked on the D&H:



### June 1830:

*Dundaff Republican, and Canal & Rail Road Intelligencer*, June 2, 1830, p. 2: “**For the Republican.** / *Delaware and Hudson Canal and Rail Road.* / Travelers from the cities of Boston, New York, Philadelphia, Baltimore, Washington, and other places far apart from each other, have frequently met in the last two or three summers at Pottsville and Mauch Chunk when on a tour to see the mountains, the Coal mines, and the mechanical operations for raising and transporting the Coal which is chiefly taken at present from said places to Philadelphia, from

whence it is shipped to the various ports in the East and South: but few of these tourists have as yet turned their thoughts to visit the romantic scenery, the extensive quarrying and mining concerns at and near to Carbondale; at this young town there are about two hundred men employed at present in raising and removing Coal to the foot of the inclined planes, whence it is carried over the Moosic mountain, sixteen and a half miles to Honesdale, which is a populous and thriving village at the head of canal navigation. The cars or coal wagons used on the eight inclined planes and rail road, each carry two and half tons, from the easterly foot of the mountain in trains of twelve; which twelve wagons carry thirty tons of coal at the speed of about six miles per hour; they descend by the power of gravity, and horses to draw back the empty cars go trotting after; the speed of the descending wagons is regulated by a break upon the wheels of two or three of them in each train; one horse hauls back four empty wagons at the rate of four miles per hour; in some places there are double roads, so that the ascending and descending carriages pass each other without the least difficulty; the loaded wagons are hauled up the planes, the steepest of which rises only one foot in twelve, three or four in a train, by means of stationary fire engines, which engines are of sufficient power to take up thirty tons at once; the longest plane is about one half mile, and the writer of this has gone up in the loaded wagons in seven and a half minutes; at present there passes over the mountain about 250 tons per day; which is as much as the Company has wagons for; in another week or two more wagons will be completed and they propose to take over 360 tons per day; when the sale requires more, two ropes can be attached to wheels at the engines and two trains of wagons can pass up the plane at the same time and do double business, for this the works and machinery are sufficiently strong and powerful. The Company is now doing a considerable business in return trade, bringing up Dry Goods, Groceries, Iron, Fish, Plaster, &c &c. for the country merchants, many of whom live in the state of New York.—The toll and carriage of a bail of fish by the Canal is about ninety cents, instead of six dollars, the usual price by land carriage; heavy articles are now for sale by the storekeepers at Honesdale, Bethany, Mount Pleasant, Clarkstown, Carbondale, Dundaff, &c as cheap as in the cities of New York or Philadelphia. Business on the Canal and Rail road is now thrown open to the public; the tolls and rates of transportation known, and all persons are at liberty to pass and repass, upon paying the same; [emphasis added] this thing which was much wanted, is no longer a matter of dispute. / Already speculation in coal land near to Carbondale is commenced; three private individuals have had men at work, during the past week in seeking for, and mining coal; one of them, only made his purchase this present month; and now refuses two hundred and fifty per cent for his bargain! It is confidently anticipated in this part of the country, that the coal land mania will subside in Schuylkill county, and that sober, serious gentlemen will feel disposed to invest a capital in the rich and productive coal lands in the valley of the Lackawanna; it will be remembered that there are no disputed Titles, no shingling of warrants on coal lands in the neighbourhood of Carbondale [emphasis added]. The numerous mines are very pure and productive varying from 50 inches to about 30 feet in thickness, lying nearly horizontal, dipping from one in 16 to one in 25, and we understand that many tracts are now offered for sale upon what will shortly be called very low and accommodating terms. We feel pleasure in stating that things in general appear brisk and lively; the farmers have a ready market, and cash, for all their

produce, and that is pleasing to them and to us: the country around us fast improving, the lands are rich and sell low, we confidently anticipate that the surrounding neighbourhood will in a few years become as respectable and happy as the boasted counties of Philadelphia or Lancaster. In our neighbourhood many new roads are in contemplation, one of which will open through what at present may be called a little wilderness, others through well settled county; all, through rich and well watered lands: some of which contain eligible mill seats upon never failing streams; a few years ago we had saw mills, grist mills and fulling mills, to supply our wants; at this time the country is not well supplied, and though many have been lately built, more are wanted. Farmers for twenty miles around Carbondale can sell their produce for more money than they can do at either New York or Philadelphia. / [To be Continued.]” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, June 2, 1830, p. 2)

By the end of June 1830, 1,500 to 1,800 tons of coal were arriving at tide water weekly. Most importantly, those shipments were announced in the *Journal of Commerce*. Here are two such announcements:

1. “*Delaware and Hudson Canal*.—On the 17th instant there had arrived at Bolton, at tide water on the Hudson, 7825 tons of coal since the 3d of May last;—and at this time there is arriving from 1500 to 1800 tons per week. *Jour of Com.*” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, June 30, 1830, p. 3)

2. “*Coal*.—Arrived from Bolton, on the 22d inst. The tow boat Lackawanna, having on board the largest cargo of coal (1500 tons) that has ever before been received at this city [New York]; the same being from the mine of the Delaware and Hudson Canal Company. She is now discharging her cargo at the yard of E. Dunscomb, Front street, near the Navy Yard ferry.—*Jour. of Com.*” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, July 7, 1830, p. 3)

In the first two years that the canal was in business, shipments of cord wood exceeded anthracite. By 1831, with the gravity railroad fully functional, the coal tonnage exceeded all other merchandise by four to one, yet the non-anthracite traffic—and the tolls it generated—remained considerable. For the years 1834 through 1838, the combined general traffic made up a respectable 36 percent of the canal tonnage.



## 1840

Water wheels were an important power source in nineteenth-century America. In the 1840s they were installed by the D&H and Planes 14-17 and 21. Were they Hotchkiss's Patent Water Wheels? Gideon Hotchkiss had three patents for waterwheels: October 25, 1832, Re-acting water wheel; November 6, 1832, Water wheel; and January 9, 1837, Construction of reacting waterwheels and their appendages. Perhaps one day we will know the answer to that question? Were they Johnson's Patent Water Wheels? Perhaps one day we will know the answer to that question? We do know that both Hotchkiss and Johnson patent water wheels "of various sizes" were "always on hand" at the Foundry of Pierson & Co. in Carbondale in April 1841. Here is the Pierson & Co. ad that was published in the *Carbondale Journal* of April 21, 1841:

**"WATER WHEELS.**—Hotchkiss's Patent Water Wheels, of various sizes, always on hand. Also, *Johnson's Patent Water Wheels*, at the Foundry of *Pierson & Co.*" (*Carbondale Journal*, April 21, 1841, p. 3)

Between April 26, 1841 and July 31, 1841, 84,130 tons of coal were shipped to market via the D&H Canal from Honesdale. During that same period, 238 "Canal Boats, with general freight" arrived in Honesdale. We have learned those facts from the following announcement that was published in the *Carbondale Journal* of August 5, 1841:

*Carbondale Journal*, August 5, 1841, p. 2:

<b>COLLECTOR'S OFFICE Del. &amp; Hud. Canal Co. }</b>	
<b>Honesdale, July 31, 1841. }</b>	
<b>Cleared at Honesdale for Rondout during one week ending this day, 212</b>	<b>Tons.</b>
<b>Canal Boats containing Coal,</b>	<b>6,360</b>
<b>Total amount of Coal cleared at Honesdale for Rondout since 26th day of April last,</b>	<b>84,130</b>
<b>Arrived during the week 238 Canal Boats, with general freight.</b>	
<b>J. B. WALTON, Collector.</b>	

In 1841, Robert Ruthven and family came to Carbondale. One of the sons of Robert Ruthven, Alexander Ruthven, “had been acting for sometime previous [to 1841] as chief clerk and paymaster for the D. & H. C. C. at this place [Carbondale].” That we know from the announcement in the *Carbondale Leader* of November 11, 1887 of the death of James Ruthven, a son of Robert Ruthven:

**“DEATH OF JAMES RUTHVEN. / Once of Carbondale, and Later a Prominent Citizen of Scranton.** / James Ruthven, a prominent citizen of Scranton, died in that city yesterday morning. He was stricken with paralysis over a year ago and was then laid aside from the duties of practical life. Mr. Ruthven was born September 23, 1826, and was the son of Robert Ruthven, who was at one time a prominent business man in Boston, and for one or two sessions represented that city in part in the General Court. The deceased came with his father’s family to Carbondale in 1841. An older brother, the late Alexander Ruthven, had been acting for sometime previous as chief clerk and paymaster for the D. & H. C. C. at this place [emphasis added]. James was employed in various capacities for the company here and as clerk in the post office until 1857, when he removed to Scranton, where he soon assumed an important position in the coal department of the D. L. & W. Co., in whose employ he remained until incapacitated by illness. . . Before leaving Carbondale the deceased was united in marriage to Mary Ann, a daughter of the late Patrick Archbald. . .” (*Carbondale Leader*, November 11, 1887, p. 4)

**Interconnectedness of the canal and the railroad.** Anthracite coal (1840s) widely recognized as the fuel of the future. The need was recognized to increase production and shipping capacity on both the canal and the railroad:

"The business of the company continued to increase during 1841 and 1842 and in September 1842 plans for increasing the capacity of the canal were approved. This enlargement was to be accomplished by raising the heights of and increasing the strength of the embankments sufficiently to maintain a depth of water in the canal of no less than five feet. The material was to be principally taken from the bed of the canal and from the berm bank below the surface of the usual boating head. This enlargement, it was estimated, would permit the use of boats of 40 tons capacity. / Work was actually commenced at the end of the boating season in November, 1842, and continued throughout that winter, but suspended again when the boating season opened in May, 1843, so that work was not finally completed until the spring of 1844. Because much of the earthwork done on the embankments during the winter just passed, had not settled sufficiently to sustain the full five foot depth without crumbling, the season of 1844 opened with only four feet of water in the canal, but as the boating season progressed the depth was gradually increased as the banks became able to sustain it. / There had sprung up along the line of the canal numerous boat yards owned by private individuals from whom the canal company purchased boats made to their specifications. The 40-ton boats which were now being built to replace the 'Flickers,' as the

first diminutive boats were called [the flickers were the first boats, used in the period 1829-1844, they carried 30 tons of coal], cost the canal company between \$360.00 and \$375.00 each and were sold to the boatmen for \$400.00 to be paid for on the installment plan. The owner of the boat was paid (during 1842) \$1.35 per ton for the trip from Honesdale to Rondout but out of this sum \$10 was retained by the company and credited against the balance owed on the boat. As many of the boats in use in 1842 were still of the 'Flicker' class their owners were unable to take advantage in full of the increased capacity of the canal, even though the boats were 'hipped' (i.e., their sides raised) to increase their capacity. During the boating season, from early May to early December, a competent boatman could, barring accident, complete 15 or 16 trips making it possible for the average boatman to pay for his boat in about three years and, as the average life of a boat was about six years, he was able to operate the boat the remaining three years on his own account." (Part 5 of E. D. LeRoy's series--titled "Canal Value for Transportation Proved by 1830; Not So Railroads" when published in the *Carbondale News*--as reprinted from the *Department of Internal Affairs Bulletin*).

**D&H Canal, 1842-1844 Configuration:** begun in 1842 and completed in 1844; depth of canal increased to 5 feet by raising and strengthening the canal banks; boats of 40 tons now could be used on the canal

**Gravity coal cars:** In an undated newspaper article titled "The Celebrated Gravity Road" (probably published in the *Carbondale Leader* in the 1890s) in the archives of the Carbondale Historical Society, the author reports the following fact about Gravity coal cars in the period before 1842: "Until 1842 all cars on this road had but four wheels. Then the present eight wheel cars were put on and called the Porter car after the Governor of the state."

#### **1840s (E. D. LeRoy, Part 6):**

"The year 1843 was the first during which the enlarged capacity of the canal was available for the entire season, but even though no less than ninety-seven new boats were put upon the canal that year, there still remained many 'Flickers' whose owners were put at a further disadvantage by the reduction in the freight rate to \$1.03 per ton for the trip. This reduction affected, in particular, those whose boats were then paid for as in addition the installment deduction was reduced by the company to \$7.00 per trip. True, with their 'hipped' boats they could carry greater tonnage than before, but they still grumbled. The canal company, summarizing the substantial saving in cost per ton resulting from the improvements already made upon the canal, decided again to increase the depth to five and one-half feet, which would make possible the use of boats



[of] fifty tons capacity. / Work on this enlargement was begun in 1845 and continued through 1845 but was not completed until the following year, although with this enlargement in prospect about a hundred boats of fifty-ton capacity were built and put in operation during these years. However, until the full head of water could be let into the canal, these boats were not loaded to their full capacity. In fact, even if the enlargement could have been completed by 1845, it is probable that full advantage could not have been taken because of a severe drought which extended over a period of eight weeks that summer, making it impossible to load the boats even to their former capacity. The canal company, to some extent, compensated the boatmen for their loss, by returning the freight rate, which had been cut to 97 cents, to the former rate of \$1.03 per ton. / While during 1846 the head of water throughout a large section of the canal had been increased, progress was much slower than had been expected. Even so, it seems that the bed of the canal was now more smooth and as a consequence handling of the boats was easier. Apparently with this in mind the canal company further reduced the freight rate on coal but, as an inducement to the boatmen to make speedier trips, a sliding scale was at this time inaugurated allowing 92 cents per ton on trips of ten days or less which would be equivalent to sixteen trips per season, 88 cents per ton for a trip of eleven days but only 85 cents per ton for trips taking more than eleven days. / During this period, between 1842-45, under the supervision of James Archbald, extensive improvements were made upon the gravity railroad in order to keep pace with the increased capacity of the canal. On the west side of the Moosic Mountains the location of the entire road, with the exception of Plane No. 1 was changed and a better grade, favoring the loaded cars, was obtained. On the east side of the mountain, Plane No. 6, which was originally the longest on the road, was divided into two separate planes; also an entirely new and separate track was built from the foot of Plane No. 7 to Honesdale, a distance of 10 miles. This was the greatest single improvement, for the original section, between Planes No. 7 and 8, had been single tracked with two turnouts or sidings. Here the loaded cars now not only had a continuous down grade of 10 miles, but it was no longer necessary to lower the loaded cars at Plane No. 8. There were no changes of importance made in the light track east of the summit, but one improvement was the replacement, throughout the length of the road, of the old wood and strap iron rails by the new 'T' iron rails manufactured at Slocum Hollow (Scranton). / In spite of these substantial improvements on the canal and the gravity railroad the demand for anthracite was growing so rapidly that it could not be met. The improvements on the canal had cost the company slightly more than \$250,000, but the savings in the cost of transporting the company's own coal had exceeded that figure by 50%, even including the period when the full capacity of the canal was not yet available, but by 1847 the 'Flickers' had largely disappeared from the canal, the 40-tonners had themselves been 'hipped' and the newest boats were now able to carry as much as 55 tons without danger of grounding. In short, the year 1848 was, in spite of the usual delays from freshets and washouts, a good one, for over seven thousand cargoes of coal were carried to tidewater between April 25, when the canal opened, and December 4th, when it was closed by freezing. / With these facts at hand, the board of managers on November 17th, 1847,

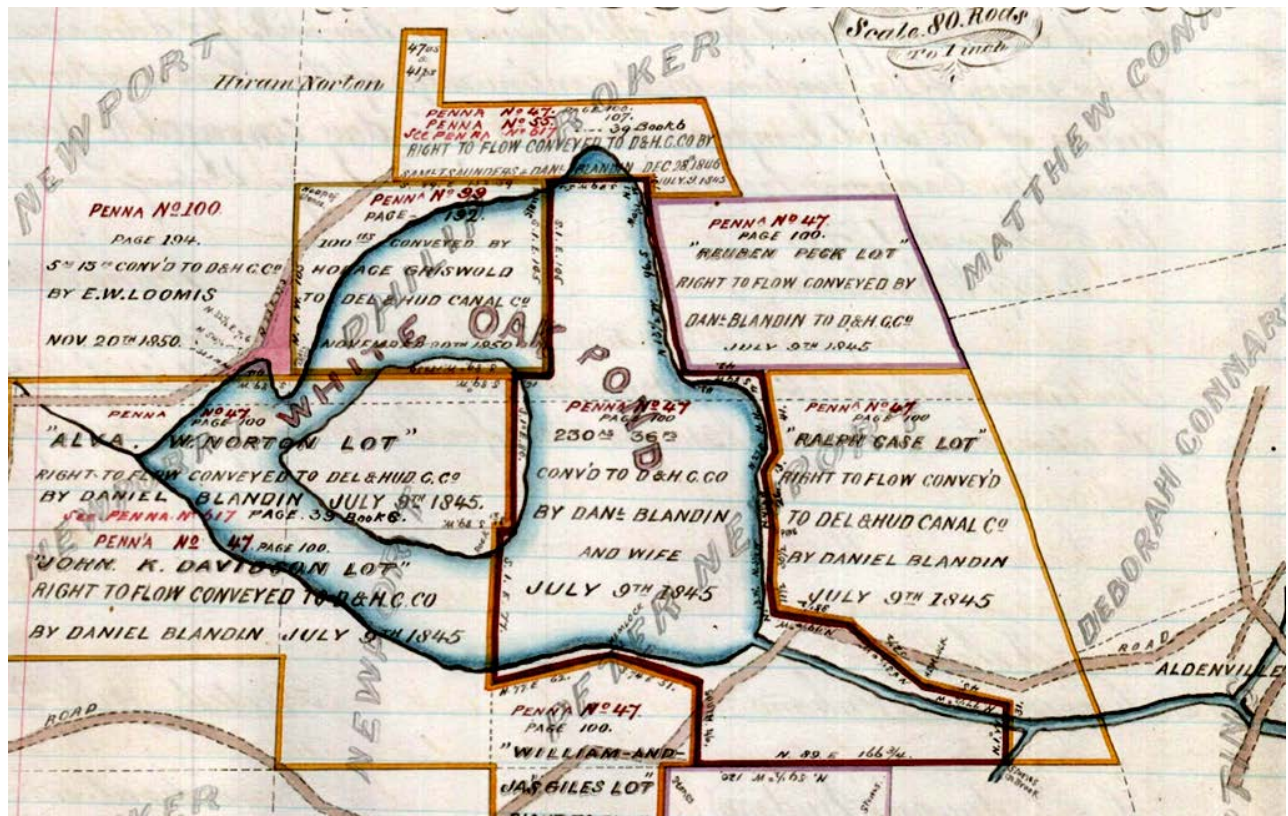
approved the recommendations of chief engineer R. F. Lord for the enlargement of the entire canal to a minimum depth of six feet. They included the enlargement of the locks which were to be further improved by the addition of more paddle gates to speed up the passage of boats. The berm bank of the canal along the Lackawaxen and Delaware Rivers was to be made more secure against the wash from the boats by the erection of stonework where necessary, for there had been many delays resulting from boats grounding on sandbars caused by the embankment washing down into the canal. The work of enlargement was begun upon the cessation of boating early in December 1847, and about the same time Chief Engineer Lord made a trip to Pittsburgh to examine the aqueduct built by John A. Roebling who many years later was to win everlasting fame as the engineer of the great Brooklyn Bridge. Lord's report was most favorable for the Pittsburgh aqueduct was a substantial work and Roebling's engineering ability was far ahead of the times. Roebling was engaged to begin work for the D. & H. at once. / Construction of these aqueducts when the company was able to finance them, had been contemplated since 1841. In fact John Wurts stated, at the Kingston hearing in 1858, that they had been under consideration from the very early days of the canal but in any event their construction was hastened by the approach of the Erie Railroad into the Delaware Valley as the D. & H. wished to prevent the prior location of the Erie tracks from affecting the most advantageous location of the new canal route./ Roebling completed the masonry on the Delaware aqueduct in January, 1848, at which time the cut stone for the Lackawaxen aqueduct was on hand and Engineer Lord wrote to Mr. Wurts stating that both spans would be ready for use in the fall of 1848. However they were not brought into use until April 26<sup>th</sup>, when the canal opened for the season. / Poling the boats across the Delaware, on the pond created by the dam just below the mouth of the Lackawaxen, had always been slow, dangerous and subject to frequent delays because of high water in the spring and fall. The mules seem to have been the only one to profit by the old route for they were afforded a well-earned rest as they were carried across the old rope ferry. / The new aqueducts necessitated the construction of three new locks (Numbers 70, 71 and 72) on the Delaware to bring the boats to the new high level but at the same time locks Numbers 1, 2, and 3 on the Lackawaxen were eliminated. The Lackawaxen aqueduct crossed the river three hundred yards above its mouth, the Delaware span about the same distance below. There being no physical obstruction to prevent it, why did not the company build a single aqueduct across the Delaware River above the mouth of the Lackawaxen, rather than bridging both rivers? / These aqueducts are monuments to the engineering skill and courage of their builder. / The Delaware span, now (1945) a highway bridge, is probably the oldest suspension span still in use. Roebling built to endure and never did he compromise for economy sake. He demanded the best material available, the most exacting workmanship and personally supervised every detail. / In January, 1849, Roebling wrote to Henry V. Poor, in New York, giving the following specifications: / 'Delaware aqueduct, four spans, 132 to 142 feet each. /Truck [trunk] width at bottom 17 feet 6 inches. /Truck [trunk] width at top 20 feet. / Depth of water 6 feet. / Weight of water in 142 foot

span 482. / Tension of cables 708 tons. / Diameter of cables 8 ½ inches. / Each cable contains 2150 wires. / Cable wt per lineal foot 130 lbs. / Ultimate strength of cables 3870 tons. / Lackawaxen aqueduct two spans 114 feet each. / Each cable seven inches in diameter. / (Same as Pittsburg aqueduct). / The wires do not extend below the ground but connect with anchor chains, the cross section of which exceeds that of the wire by 50%. / Strength of wire being 90,000 lbs. per superficial inch while chains will not bear over 60,000 lbs.' / Later that year, Roebling is quoted in the Honesdale Democrat as stating that there were 7688 cubic yards of hydraulic cement masonry in the Delaware Aqueduct. / More modern bridges have been swept away but Roebling's have withstood every flood and ice for almost a century. / While the construction of these aqueducts was in progress, construction was begun on suspension aqueducts to replace the original wood and stone aqueduct across the Neversink River near Cuddebackville [the canal crossed the Neversink and smaller streams by wooden trunks on stone piers] and the stone arch aqueduct across Rondout Creek at High Falls [the original canal crossed the Rondout on a masonry-arch aqueduct supported by two arches; construction on the new High Falls aqueduct was begun in 1849; it was 145 feet long; two wrought iron wire cables, supporting a wooden trunk; each cable over 8 ½ inches in diameter, containing 2,300 wires]. Except that these aqueducts were single spans they were similar in construction to the Delaware and Lackawaxen aqueducts. Both were ready for operation when the 1851 season opened. / Speaking of the Delaware and Lackawaxen aqueducts, Chief Engineer Lord estimated that they had avoided delays due to high water totaling nine days during their first year of use and furthermore, with the elimination of the first three Lackawaxen locks, the delay in getting the mules on board the ferry and in putting the boat itself across the Delaware, not less than one day was saved each trip. / During the years in which the aqueducts were under construction, the canal was very active, for the demand for Lackawaxen anthracite was increasing rapidly and every effort was being made to meet it, but nature and the Erie Railroad seemed bound to thwart them. During the season of 1847, which opened March 26, flood waters held up the boats at the Delaware Crossing and at Honesdale for two days in May. In June a breach occurred on the summit level which held up the boats for nine days. In July a freshet made the Delaware impassable for two days and in August a breach occurred at White Mills, blocking traffic for a day and a half. Labor was scarce because of the construction then going forward on the Erie Railroad and elsewhere, and the price of oats, hay, and provisions had risen to new heights. To offset these difficulties, the company offered to pay the boatmen a premium of \$2.00 per trip, but this does not seem to have been sufficient inducement, so the freight rate was increased to \$1.00, 96 cents, or 92 cents per ton, depending upon the length of the trip. Still, the boat owners were not all satisfied, for those who were still operating smaller boats, which were not fully paid for, did not bother to care for them and in some instances abandoned them outright." (Part 6 of E. D. LeRoy's series titled "1840's Saw Great Improvements to D&H Canal; Delaware Aqueduct Used in 1849"):



1845

By a deed, dated July 9, 1845, between Daniel Blandin and wife and The Delaware & Hudson Canal Company, pp. 100-104 in the *D. & H Deed Book – Wayne*, the D&H acquired the right of flow of the waters of the White Oak Pond. These rights were acquired to guarantee that there was enough water in the D&H Canal at all times. Here is the map in that deed book, on page 103:



**D&H Canal, 1845-1847 Configuration:** begun in 1845 and completed in 1847, 5 ½ feet deep, boats of 50 tons

**D&H Canal, 1848-1849 Configuration:** begun in 1848 and completed in 1849, 48-50 feet wide at water line, 32 feet at bottom; 6 feet deep, boats of 130 tons; locks enlarged to 100 feet by 15 feet. The annual capacity of the canal was now one million tons (five times what it was in 1842). 1850—boats carrying 98 tons came into use. “Fifty seven of the enlarged locks were made one hundred feet long between quoins and given fifteen feet width of chamber. . .” (*Mathews*, p. 244)

On the Canal there were the 4 suspension-type aqueducts with wood trunks constructed by Roebling; in addition, there were 16 wood trunk aqueducts supported on masonry piers.

### **The Neversink Aqueduct:**

Neversink aqueduct: work begun in June 1849; completed in winter of 1850-1851 and ready for 1851 boating season.

This aqueduct had a span of 170 feet with no intermediate piers. The bridge’s wood trunk was supported by two 9 ½” cables, consisting of 3,024 wires each.

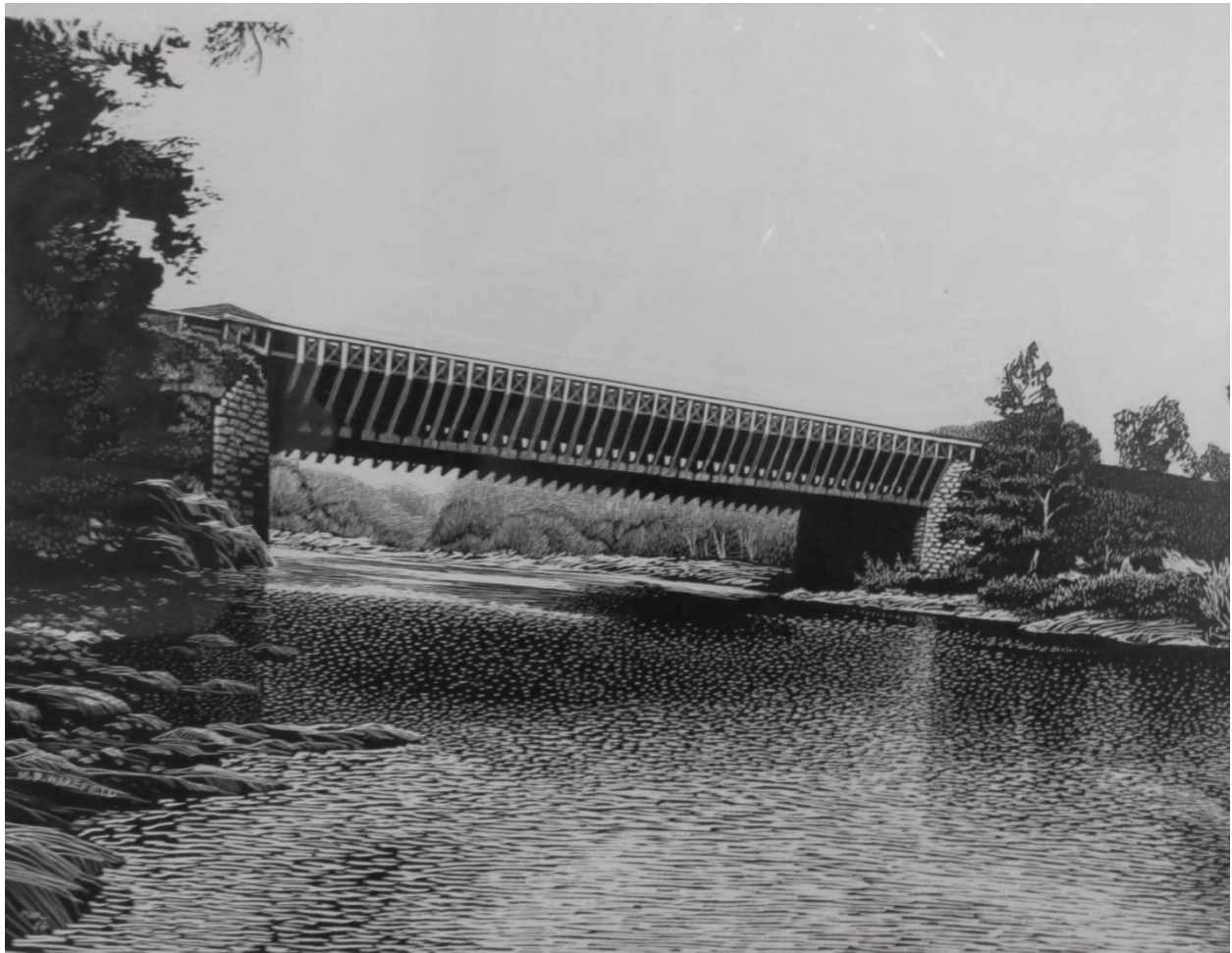
Here is a photograph of one of the abutments of the Neversink Aqueduct that was taken by the author on January 16, 2008:

Nevrsink Aqueduct abutment:





Here is a photo that was taken by the author on October 23, 2013 of the line drawing of Roebling's Neversink Aqueduct that was created by Manville B. Wakefield. The original of this drawing is in the holdings of the D. & H Canal Historical Society and Museum at 23 Mohonk Road, High Falls, NY.



## **The Lackawaxen Aqueduct:**

Lackawaxen and Delaware Aqueducts: ready when the canal opened in April 1849.

Lackawaxen Aqueduct: built as part of the 1848 enlargement, two spans, 114 feet each; each cable 7 inches in diameter (same as Pittsburgh aqueduct), each cable containing 1,624 wires.

Here is a photograph of the Lackawaxen aqueduct that is in the archives of the Pike County Historical Society at Milford, PA. Written on the scrap book page to which this photograph is glued is the following note: "There were double tow-paths from Delaware Lock No. 72 to Lackawaxen Lock No. 4"

Here is that photograph:





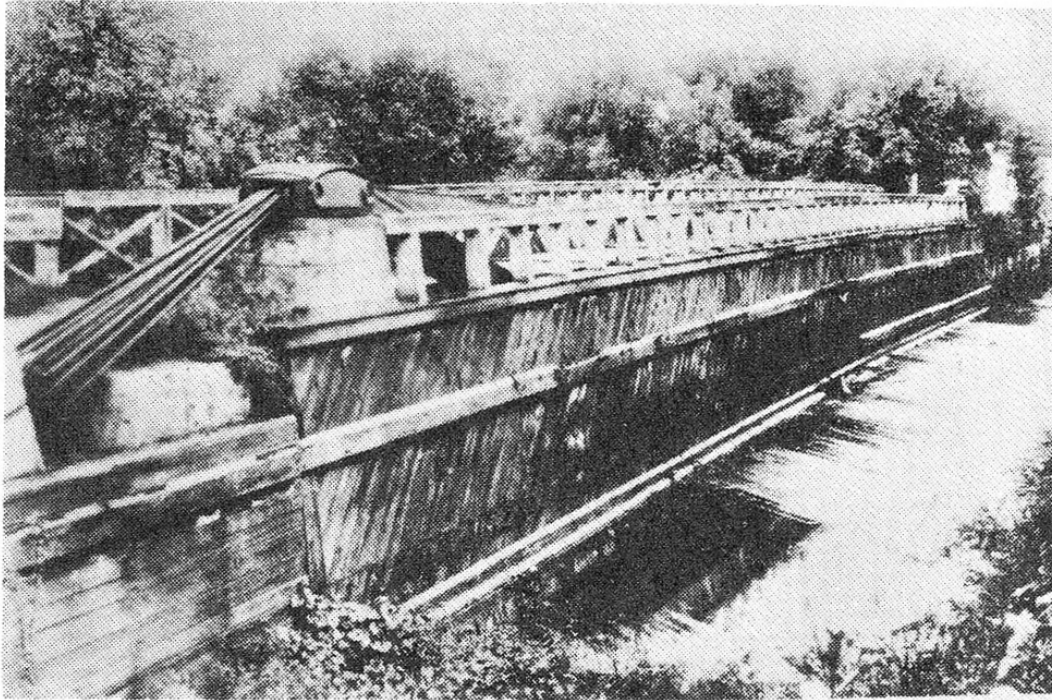
Another photograph of the Lackawaxen Aqueduct (same photo as above it appears, but focus is better and sharper); photograph in the archives of the Carbondale D&H Transportation Museum.



In 1862 the Lackawaxen Aqueduct (built 1848) was swept away and six weeks of the most favorable season for canal navigation were lost. In June 1862, there were nearly 500 men at work building a new aqueduct over the Lackawaxen River. In the *Carbondale Advance* of June 28, 1862, we read:

**“The Del. & Hud. Canal.**—We regret to state that owing to unexpected difficulties in keeping the water out of the coffer dam, the work of laying the foundation for the pier of the new aqueduct at Lackawaxen has been delayed considerably beyond the time which it was supposed would be required. Four steam engines having been found inadequate to the purpose of keeping the dam dry, a fifth was procured and set to work on Monday last. Allowing one week for laying the foundation of the pier, two weeks for building the same, and a fortnight more for the completion of the wood-work of the aqueduct, we are scarcely warranted in looking for the resumption of navigation much before the 1<sup>st</sup> of August. There are nearly five hundred men at work on this break, including many of the best mechanics on the line of the canal and all under the personal supervision of chief engineer Lord, so that we may be assured that the work will be pushed to a completion at the earliest possible day. The breaks at the Narrows and other points, though very extensive, will be repaired in the course of a few days.—*Wayne Co. Herald.*”  
(*Carbondale Advance*, June 28, 1862, p. 2)

Photographs of the Lackawaxen Aqueduct are not numerous. Here is a photo that is given in *Sanderson*, p. 33, of the Lackawaxen Aqueduct:



Many photographs were taken as the boats moved east across the Lackawaxen Aqueduct. One such photograph of the boat *Little Freddie*, operated by Mr. and Mrs. George Cameron and their sons George, Fred, and Mattie, is given on page 33 of *Sanderson*.

While the construction of the Lackawaxen and Delaware Aqueducts was in progress, construction was begun on suspension aqueducts to replace the original wood and stone aqueduct across the Neversink River near Cuddebackville and the stone arch aqueduct across the Rondout Creek at High Falls—both similar in construction to the Lackawaxen and Delaware Aqueducts. The new Cuddebackville and High Falls aqueducts were single spans and both were ready when the 1851 season opened. The Neversink Aqueduct was the most expensive of the four Roebling aqueducts: 170-foot long single span, two 9 ½” cables, each weighing 36 tons.

The following fact-filled account of John A. Roebling and his four D&H aqueducts is given in *Durfee* (pp. 126-128):

“John A. Roebling, born June 12, 1806, Mulhousen, Prussia. At age 25 came to America and settled in Pittsburgh area. Worked for state of Pennsylvania for three years in surveying and locating the Pennsylvania Railroad across the Allegheny Mountains from Harrisburg to Pittsburgh. “Having completed these surveys, Mr. Roebling commenced the manufacture of wire rope, producing the first of the kind that was ever manufactured in this country. He concluded that he could use it in making bridges. “In 1848 Mr. Roebling commenced the construction of a series of suspension aqueducts on the line of the Delaware and Hudson canal, connecting the anthracite coal regions of Pennsylvania with the tidewater of the Hudson river. We well remember when his men passed through Carbondale with their apparatus for building these works. The Lackawaxen aqueduct had two spans 115 feet each, and two 7 inch cables; the Delaware aqueduct, four spans, 134 feet each, and two 8 inch cables; The High Falls aqueduct, one span 145 feet, and two 8 ½ inch cables; and the Neversink aqueduct, one span 170 feet, and two 9 ½ inch cables. They were completed within two years, and are all permanent works, needing only a renewal of the wooden parts as they decay from the action of the water. Soon after the completion of this work, he removed his works and residence to Trenton, N. J.” (pp. 126-128)

Both the Delaware Aqueduct and the Lackawaxen Aqueduct are shown on the map on page 215 that illustrates the deed between Russel F. Lord and wife / Thomas H. R. Tracy and wife and The Delaware and Hudson Canal Company, deed given on pages 212-215 of the D&H Deeds PA, deed dated March 13, 1851. Here is that map:





Here are two photographs of the Lackawaxen Aqueduct / Delaware Aqueduct area that were taken by A. L. Taylor, View Artist, James Street, Middletown, NY. These photographs are in the collection of the Minisink Valley Historical Society:

*Confluence of Lackawaxen and Delaware Rivers, with Erie Railroad bridge in the foreground and Delaware Aqueduct in the background:*



The construction of the four Roebling aqueducts was hastened by the approach of the Erie Railroad into the Delaware Valley, as the D&H wished to prevent the prior location of the Erie tracks from affecting the most advantageous location of the new canal route. The branch of the Erie to Hawley connected with the Erie main line at Lackawaxen. The Erie rail line from Lackawaxen to Hawley was built in 1863; the Erie rail line from Hawley to East Honesdale was built 1867-68.



The buildings shown in the Taylor photograph below are located on the West shore of the Lackawaxen River as it enters the Delaware River. The building on the right was a hotel.



*The Lackawaxen River as It Enters the Delaware River*



## **The Delaware Aqueduct:**

The Lackawaxen and Delaware Aqueducts were ready when the canal opened in April 1849.

Here is a photograph of the Delaware Aqueduct that is in the archives of the Pike County Historical Society at Milford, PA.



*Delaware Aqueduct*

Here is another view of the Delaware Aqueduct that is in the archives of the Pike County Historical Society, Milford, PA. The photographer is standing on the New York side of the aqueduct. The Delaware River flows from right to left.



### March 1830

RE: A lock in the Delaware Dam at the Delaware Aqueduct:

**“FATE OF THE DELAWARE AND HUDSON CANAL** / The report of the commissioners appointed by the state to examine the works of the company, and report within 25 days was in substance as follows. / That in their opinion, after having examined the company’s works an obtained the best possible information; the company have fully sustained the conditions and stipulations of their charter, with but *one* solitary exception. That is, whereas the charter provided for the building of a *Lock* in the Delaware dam for the convenience of the ascending navigation of said river.—*No such Lock has ever been erected*, and from the best evidence which your committee have been enabled to obtain it is about eighteen years since the last boat of any description has ascended those waters, and a rational probability is, that from eighteen to forty years more will elapse before another will attempt to risk the maddening stream. If the turnpike roads should wear out, and the canals break down it may be found necessary to resume the obsolete practice of ascending the Delaware in Durham boats. The committee were without further ceremony discharged, and the company left at full liberty to pursue their operations in future.—Ed.” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, March 11, 1830, p. 3)



**The Delaware Aqueduct and the slackwater dam, up stream of the aqueduct.**

The slackwater dam provided a large pool of calm water which made it possible for the canal boats to be conducted across the Delaware before the Delaware Aqueduct was built. After the completion of the aqueduct, the slackwater dam continued to serve a useful function for the D&H: it helped keep a good flow of water into the guard lock on the New York side of the river.



Freshet in the Delaware, April 1864, and Raftsmen Sending Lumber to Market:

“There is a freshet in the Delaware and the raftmen are busily engaged in forwarding their lumber to market. Prices this spring bid fair to give them a well earned reward for their labor. Hands are scarce and readily command from \$1.50 to \$2.00 per day.—*Milford Eagle*.”  
(*Carbondale Advance*, April 23, 1864, p. 2)



Given below is a second view of the slackwater dam that was up-river from the Delaware Aqueduct. This original Taylor photograph is in the collection of the Minisink Valley Historical Society.



The 16-foot high slackwater dam up-river from the Delaware Aqueduct

Delaware Aqueduct, completed 1848: four spans (from East to West): 131 feet 10 inches, 130 feet 10 inches, 131 feet 4 inches, and 141 feet 5 inches; cables 8 1/2 inches in diameter (which were air spun—a technique devised by John Augustus Roebling, 1806-1869) and 576 feet long, each containing 2,150 wires (two at a time, 1/4-inch wrought iron wires were shuttled across the river over the stone piers, looped over anchor chain shoes, then shuttled back to loop over the opposite set of anchor chain shoes. The end of one roll of wire was spliced to the beginning of the next roll of wire. Back and forth they went, until a bundle, made up of a continuous strand of wire, was created. Seven of these bundles make up a single cable. The maximum strength of each cable was nineteen hundred tons with the total weight of cables and anchor chains placed at four hundred and ninety thousand pounds. Iron rods were hung/suspended from the cables to hold up the trusses supporting the aqueduct. The cast iron anchor plate (for each cable on both

sides of the bridge) is six feet by six feet and is buried almost 20 feet below the surface.); 7,688 cubic yards of hydraulic cement masonry in the aqueduct. Towpath for mules on up-river side of bridge, towpath widened slightly at each of the three piers; the pedestrian towpath, on down-river side of bridge, was not widened at the piers. Six feet of water on the bridge. Up-river from the aqueduct is the 16-foot high slackwater dam that the D&H built in 1828 to create a pool of deep, slow-moving water which allowed the canal boats to safely cross the river. Before the Delaware Aqueduct was built, mules and their drivers crossed the Delaware River on a rope ferry; the canal boats were poled or floated across the river, and the mules were then re-attached to the boats. Because the slackwater dam (in addition to creating a deep pool of slow-moving water that made it possible for the canal boats to cross) also diverted water into the canal on the New York side of the river, via a guard lock, the D&H maintained the slackwater dam right up to 1898.

A portion of the slackwater dam and the entrance to the guard lock (through which the boats entered the canal on the New York side of the Delaware before the Roebling aqueduct was built) is seen in the photo given below from *Wakefield*, p. 217 (where it is reproduced courtesy of the Delaware & Hudson Canal Historical Society):





This photo of the Delaware Aqueduct and the guard lock on the Canal was lent to the author by Mrs. Dorothy Moon (National Park Service, 274 River Road, Beech Lake, PA 18405) at the meeting of the D&H THC on October 24, 2012.

Z. Jessup Lord, who retired from the D&H on December 1, 1921, after 59 years of service, recalled, in 1928, that "Two horses or mules would draw one boat through a division of the canal, being relieved at each division headquarters, [emphasis added] the movement averaging 35 boats per day." ("Living Representative of Old D. & H. Gravity Canal," newspaper clipping, dated February 28, 1922)

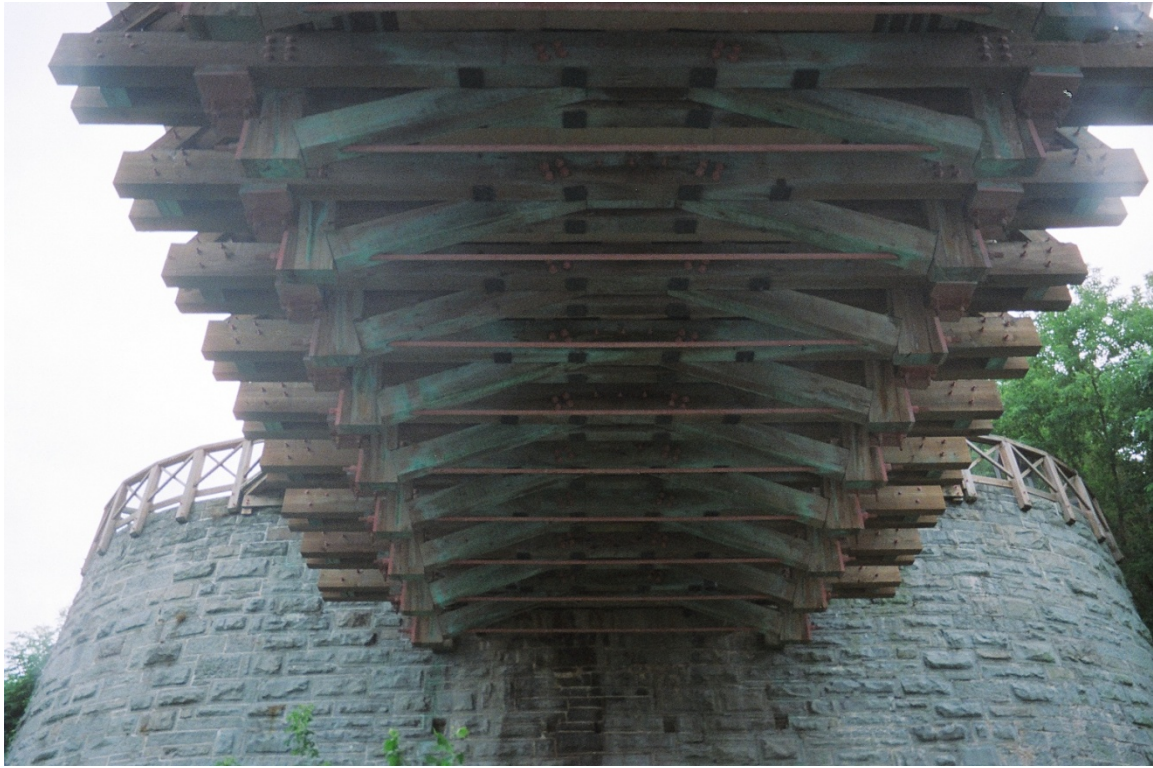
Each division headquarters: the D&H Canal is generally thought of in five sections: Lackawaxen, Delaware, Neversink/Summit, Ellenville, and Rondout. Did the mules only work (loaded and light) one section? Instead of transporting the mules and horses across the Delaware at the end of the Lackawaxen section (which must have been a job getting them on and off the ferry), is it possible that the same mules went back and forth from Honesdale to the Delaware River?



In this same article about Z. Jessup Lord, we read: "At the time Mr. Lord entered the service [1862], the canal was divided into four divisions, [emphasis added] each under a superintendent. He laughingly told of the time when the superintendent of the canal rode the length of his division each day on horseback, and each third month carried the pay of the canal forces on the division in his saddle bags and paid off." '

Here are three photos of the Delaware Aqueduct that were taken by the author on July 28, 2011:











### **The High Falls Aqueduct:**

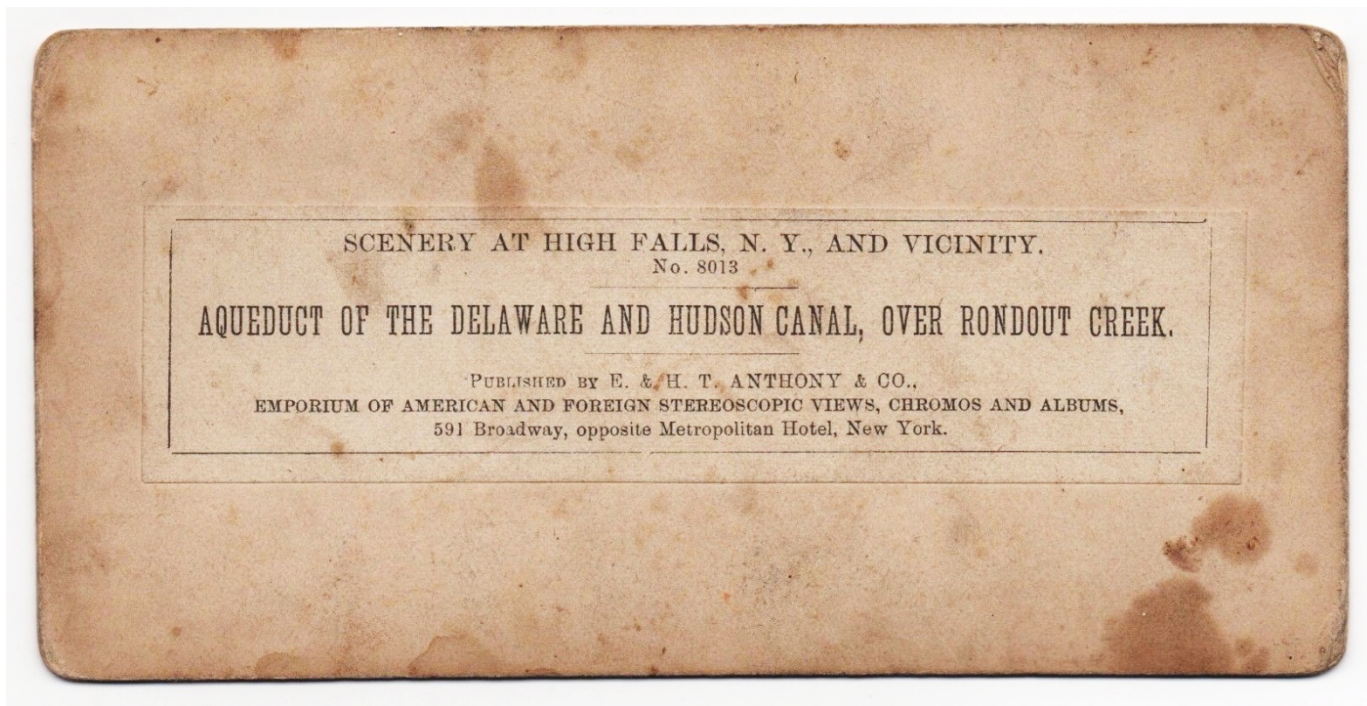
Work on the High Falls aqueduct was begun in April 1849, completed in winter of 1850-1851, and the aqueduct was ready for the 1851 boating season.

Here is a line drawing by Manville B. Wakefield of both the original 1826 High Falls Aqueduct and the 1850-1851 Roebling Aqueduct. In this drawing, the 1826 Aqueduct is behind/upstream from the 1850-1851 Aqueduct. This line drawing is in the collection of the D. & H. Canal Historical Society at High Falls, NY, where it was photographed by the author on October 23, 2013:





Here is the E. & H. T. Anthony & Co. stereo view of the Roebling "Aqueduct of the Delaware and Hudson Canal, Over Rondout Creek." This stereocard is No. 8013 in the Anthony series titled "Scenery at High Falls, N. Y., and Vicinity." Our thanks to John V. Buberniak for bringing this card to our attention on November 30, 2015, when it was being sold on E-Bay.



Here is what we have learned about E. & H. T. Anthony & Company from *Wikipedia*:

E. & H. T. Anthony & Company was the largest supplier and distributors of photographic supplies in the United States during the 19th century.

Company founder Edward Anthony, a Columbia College trained civil engineer who had studied photography with Samuel F. B. Morse, started in the photography business in 1842 by opening a Daguerreotype gallery in New York. Five years later he opened a separate shop devoted exclusively to photographic supplies and as sales grew rapidly ceased operations in his daguerreotypist gallery. In 1850 Anthony began the production of daguerreotype cases, camera boxes, and photographic chemicals. His brother, Henry T. Anthony, joined the business two years later in 1852.

The Anthony brothers' factory was located at New York City's Harlem Railroad Depot occupying 1/4 of the building by 1854 and advertised that their company was the largest manufacturer and distributor of photographic apparatus and material in the world. In 1859 Anthony added stereoscopic view cards, photographic albums, and gallery furniture and backdrops to the company's product lines. The Anthony company also maintained a close business relationship with famed American photographer and portraitist Mathew Brady.

From February, 1870 until April, 1902 the company published a monthly magazine called *Anthony's Photographic Bulletin* which included many photographs and illustrations as well as a wide variety of contributed technical, practical, and scholarly articles along with advertisements for the Anthony company's products and other services. In the 1890s the company also developed and produced two consumer cameras of their own design—a camera-box called the "Buckeye" and a more expensive bellows-box type called the "Marlborough"—as well as an extensive line of photo cases and other products.

The firm's name was formally changed to E. & H. T. Anthony & Co. in 1862 and in 1877 was reorganized as a corporation with Anthony as president, his brother as vice-president, and Colonel V. M. Wilcox as manager and secretary. After the death of both brothers, Wilcox became president, Richard A. Anthony (son of Edward Anthony) vice-president, and Frederick A. Anthony the secretary. In 1883 the company produced the first commercially manufactured hand instantaneous camera, called the Schmidt Patent Detective Camera, in America. E. & H. T. Anthony merged with the Scovill and Adams Company in 1902.

The E. & H. T. Anthony & Company was the corporate predecessor of the Ansco Company.

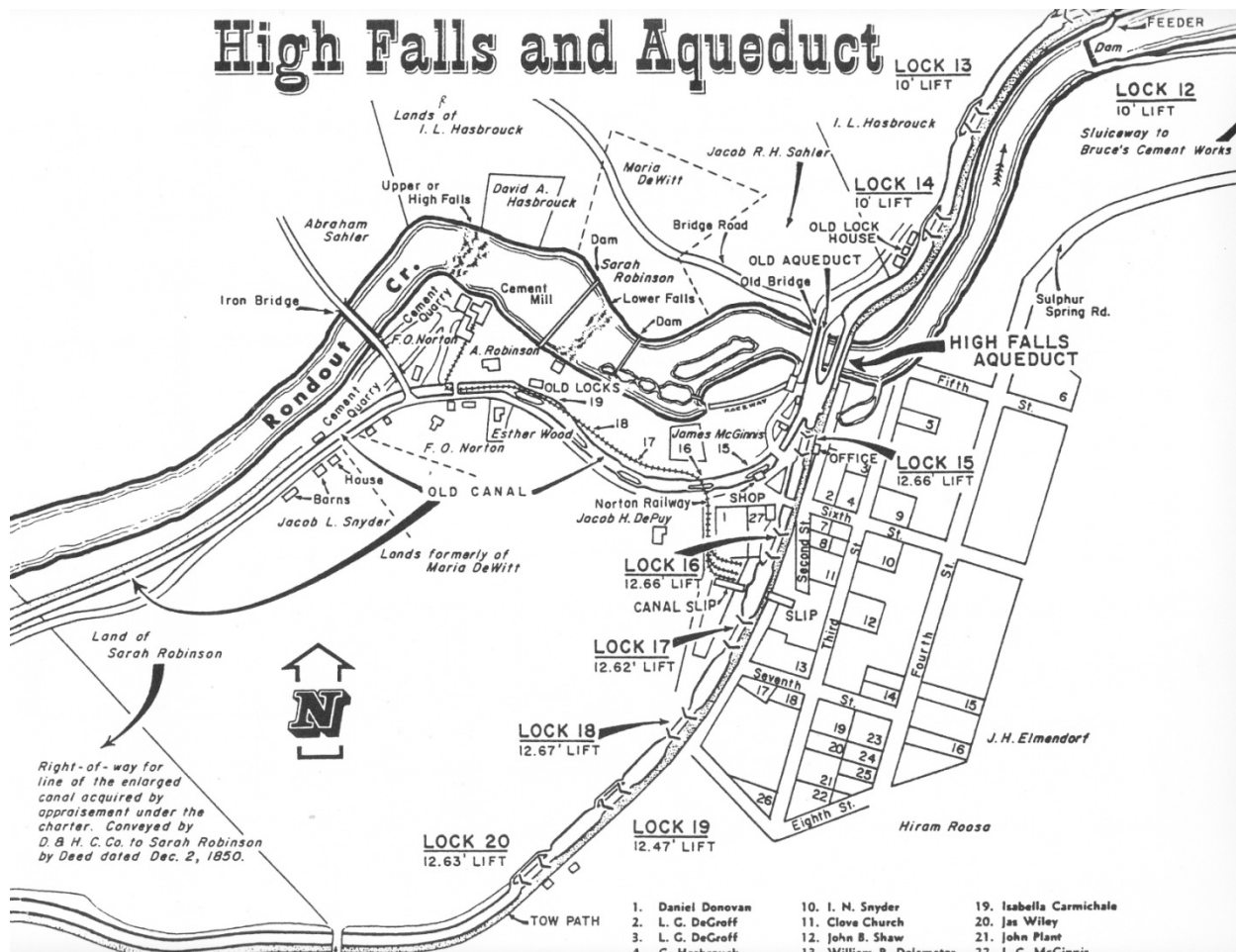


**High Falls Aqueduct:**

A Roebling suspension aqueduct, started in April 1849. The High Falls Aqueduct, which cost \$20,400 to build, was opened in 1851. The canal originally crossed the Rondout at High Falls on a double-arched stone bridge, built in 1826. The Roebling High Falls aqueduct burned in 1916.

As originally configured, there were five wood-lined locks (Nos. 15-19) on the south side (the town side) of the Rondout Creek. In 1852, a new route for the Canal through High Falls, farther to the south than the original Canal route through High Falls, was designed which better aligned the Canal with the Roebling Aqueduct which was constructed over the Rondout Creek in 1849, as part of the third major widening and deepening of the Canal in the period 1847-1852. Five new High Falls locks, Nos. 16-20, each 90 feet long, 15 feet wide and 15 feet deep, enabling boats to change their elevation about 63 feet in total, were in the 1852 design. These new locks, all SW of present-day Sixth Street/Route 213, were designed to accommodate increased Canal traffic and larger boats. They were built with Shawangunk conglomerate stone, and were precision cut and fit, with no wood lining.

Here is an excellent map/schematic of the High Falls area, showing both the “old” and “new” locks:



*Lock 16, in 2011.* Photo by the author on October 26, 2011.

In the grassy area in front of Lock 16 is a keystone from one of the arches on the 1828 stone aqueduct that crossed the High Falls River. To the right is the former DePuy Canal House, a tavern built in 1797 by Simeon DePuy and enlarged in 1820 to serve workers and travelers on the D&H Canal. The DePuy Canal House is now the home of the High Falls D&H Canal Museum.





In the view of Lock 16 shown below, dated October 26, 2011, the author, left, and Cliff Robinson, both representing the Delaware and Hudson Transportation Heritage Council, together with Jane Varcoe (also with the DHTHC), who took this photograph, examine the lock.

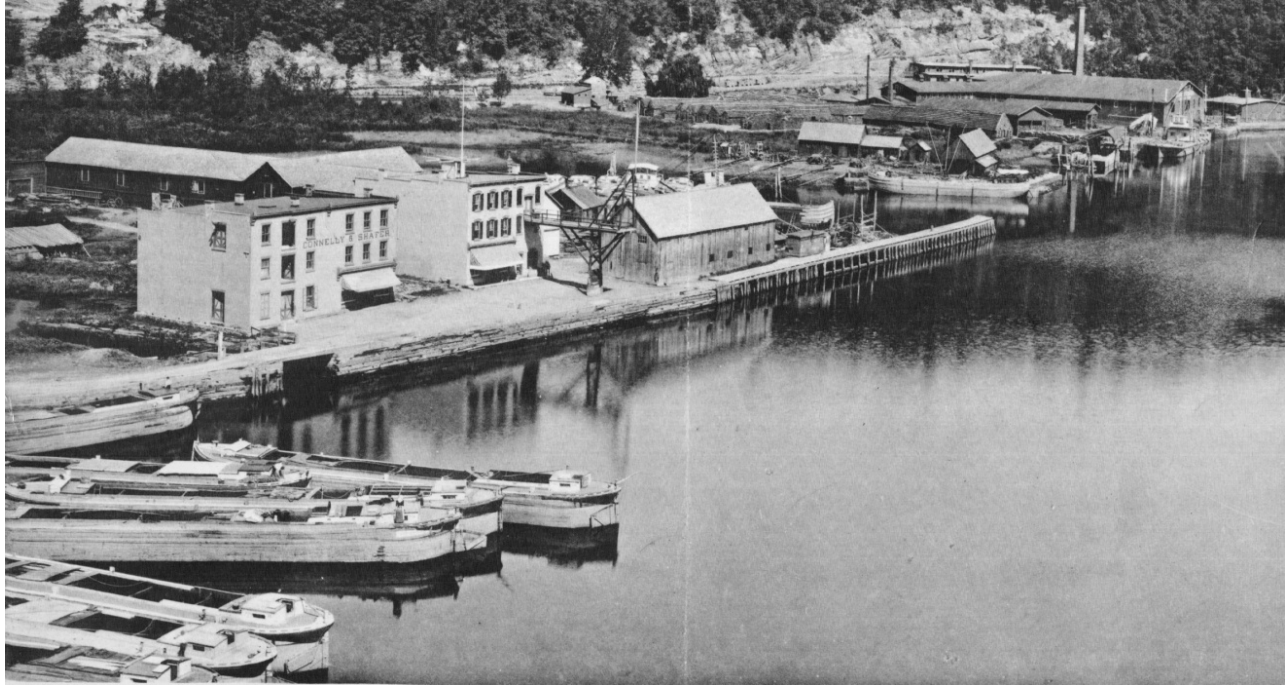


Here is another view of Lock 16, one of the five new locks that were built through High Falls in 1852 as part of the third major widening and deepening of the canal, undertaken between 1847 and 1852, to accommodate increased traffic and the larger canal boats. In passing through Locks 16-20, the boats were raised or lowered 63 feet in total (an average of 12.6 feet per lock), making these locks among the steepest on the D&H Canal.





Here is a photograph of Eddyville in 1897. The D&H tidewater lock was here at Eddyville. The original of this photograph is in the archives of the Wayne County Historical Society, to whom it was donated in April 1965 by T. J. McGinnis.



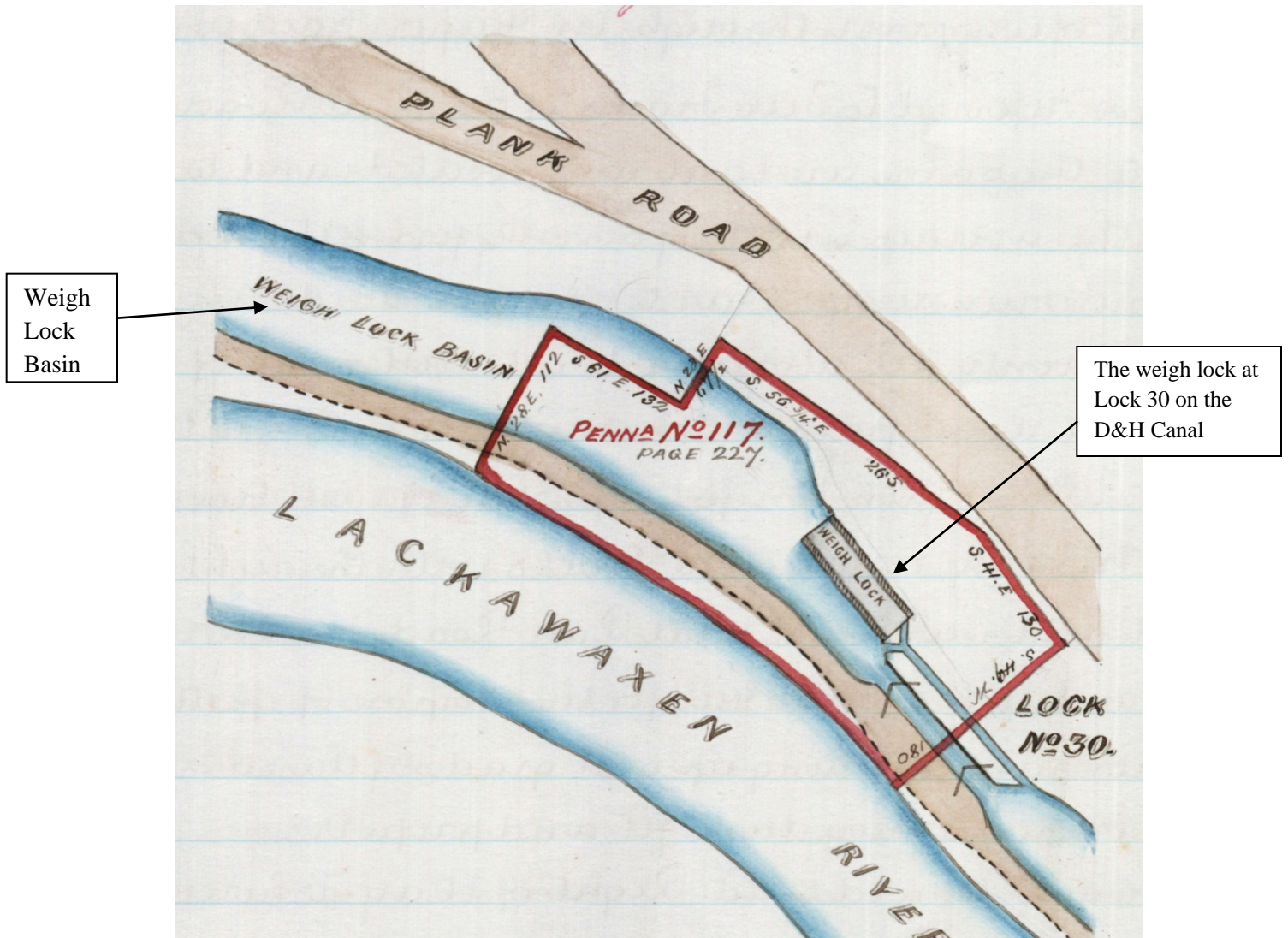
### **Weigh Locks on the D&H Canal:**

There were only two weigh locks on the canal: the first just east of Hawley (downstream, East, from the Hawley basin), the second at Eddyville (at the Tidewater Lock). The weigh lock at Hawley was used by boats consigned to points between Hawley and Eddyville; also to gauge tolls to be charged for coal shipped by the Pennsylvania Coal Company. All other boats, for external points, were weighed at Eddyville.

At the beginning of the season, the boats were weighed empty at Eddyville and the boat's name and number and weight were recorded at the collector's office. When the boat returned loaded to Eddyville, it was again weighed and the difference noted, thereby indicating the tonnage of the cargo.



The weigh lock on Lock 30 is shown on the map that illustrates the deed, dated September 3, 1851, between Stephen Torrey and wife / Russel F. Lord and wife / Thomas H. R. Tracy and wife / Jacob B. Fitch and wife and The Delaware and Hudson Canal Company. That deed is given in D&H Deeds PA (collection of the Carbondale D&H Transportation Museum) on pages 227-229; the map is on page 229. Here is that map:



1850

*Lackawanna Citizen and Carbondale Democrat*, September 13, 1850, p. 1

Erie passenger and freight trains from Narrowsburg, NY

Passengers on D&H Canal packet boats from Honesdale to Lackawaxen Station could connect there with Erie cars, East and West.

**D&H Canal Freight Line:** Canal boats from Lackawaxen Depot and the Erie there to connect with the PCC Gravity to Pittston or the D&H Gravity to Carbondale and Archbald. Direct goods to H. Carpenter at Lackawaxen Depot. Much less expensive than cost of cartage from Narrowsburg to Honesdale. Wilbur & Patmor.

## N. Y. & ERIE R. ROAD.



### PASSENGER TRAINS pass NARROWSBURGH, from and after May 27, 1850, as follows:

Express, going West,	12 55 P. M.
Mail, " "	2 16 "
Night, " "	12 15 A. M.
Night, " East,	2 15 "
Mail, " "	1 45 P. M.
Express, " "	3 30 "

### WAY FREIGHT.

Going West,	7 37 A. M.
Going East,	7 50 P. M.
Passengers by Canal Packet Boat to the Lackawaxen Station, can take the Cars of the New York & Erie Railroad, to go	
West,	1 40 P. M.
East,	2 20 "
By Night Train West,	11 45 "
" " East,	2 50 A. M.

For further particulars enquire of  
JOHN WILLIAMSON,  
May 27, 1850. 269tfj R. R. Agent at Station

## N. Y. & ERIE R ROAD,

AND

### Del. & Hudson Canal, Freight Line.

ON and after June 10, 1850, a daily line of Boats will run from

### LACKAWAXEN DEPOT,

N Y. & ERIE R. ROAD, to Hawley, to connect with the Pennsylvania R. Road to Pittston, and to Honesdale, to connect with the D. & H. Canal Co's., R. Road to

### CARBONDALE & ARCHBALD,

for the transportation of Merchandise at a reduced price of freight; a saving of 100 per cent on the cartage now paid from

### NARROWSBURG to HONESDALE.

All goods directed to H. CARPENTER, Lackawaxen Depot, will be sent on this line, and all business punctually attended to.

### WILBUR & PATMOR.

A Daily Line of Packets will be on in a few days for light Freight and Passengers.

### J. A. PATMOR.

"A Daily Line of Packets will be on [the D&H Canal] in a few days for light Freight and Passengers. / J. A. Patmor."

In 1850, shipments of coal over the canal amounted to 432,339 tons, more than double the amount shipped in 1841, when it was decided to improve the canal.

**1856:** the new drop gates in place on the Canal; the boats could be “swelled” out of the locks, which speeded up operations.

The first disagreement between labor and management on the D&H took place in the spring of 1856 when the canal opened with the new drop-gates in place. With the new drop-gates as well as improved machinery for operating the lower gates of the locks, one lock tender could now lock a boat through more efficiently and easily than two men had done previously. In addition, standard freight rates for locking through were now charged boatmen. The boatmen were not pleased with these new arrangements and on May 15, 1856, the boatmen at Eddyville struck, demanding a rate which would enable them to meet the higher living costs. The company offered \$1.05 per ton. The boatmen accepted the offer. Eight days after the strike began, boats were moving through the canal once again. In *E. D. LeRoy*, we read:

"A new, practical, time-saving innovation, the drop-gate, was first tried out on the D. & H. Canal in 1855. The device proved so satisfactory that, as soon as the canal closed for the season, in December of that year, the work of replacing the upper gates of each lock throughout the canal was begun. The work progressed rapidly and by May, 1856, the new gates were ready for use. These new gates, together with the improved machinery for operating the lower gates, which were not in themselves changes, now made it possible for one lock tender to lock a boat through more efficiently and easily than two men had done before. / At this time the practice of basing the freight payment, to the boat owners, upon the length of time taken for the trip was abandoned and the freight rate of ninety-two cents per ton for the trip, with an additional allowance of five cents per ton to boatmasters who conformed strictly with the contract, and the rules for navigating the canal. This rate was not deemed satisfactory by the boatmen, who struck at Eddyville on May 15<sup>th</sup>, demanding a rate which would enable them to meet the higher living costs. The demands seem to have been justified, for the company's offer of \$1.05 per ton was accepted and eight days after the strike had begun, the boats were moving again." (p. 68)

## **1860**

The D&H Feeder Dam (twenty-three feet high, covering 100 acres) on Carley Brook, at Smith Hill, broke on February 13, 1861, with devastating consequences between there and the Lackawaxen. In the rushing water, Bunnell's Pond and a sawmill were carried away. Severe damage was done to the Bunnell & Palmer Tannery. Gaylord Russell's house and a team of oxen were carried away. Much destruction at the Brookfield Glass works. Brookfield house swept into



the Canal and then into the Lackawaxen; also a tenant house above the falls was swept away; the building in which bottles were made and the window glass house were swept into the river, along with a thousand boxes of window glass. R. J. Knapp's chair shop and two bridges were also destroyed; the D&H Canal embankment was broken.

About this catastrophe, we read the following in the February 16, 1861 issue of the *Carbondale Advance* (p. 2):

"The sudden thaw and breaking up of the fetters of winter which occurred in the early part of this week, did no damage of moment here, except to fill some of the mines with water. On each side of us, at Honesdale and in the Wyoming Valley, as will be seen below, the damages were severe. The *Honesdale Dem.* says: Yesterday morning the dam of the reservoir of the Delaware & Hudson Canal Company, situated on Smith Hill, on the sources of the Carley Brook, yielded to pressure of the ice, and went out. At the head of Bunnell's Pond a mass of refuse was piled up. Bunnell's dam was carried away, together with the saw mill, which landed about a quarter of a mile from its original position and forty feet from the stream. The tannery of Messrs. Bunnell & Palmer, was nearly ruined. The damage to this property cannot be estimated. Below this it washed away a house of Mr. Gaylard Russell, he barely escaping with his life. He lost a yoke of oxen. Between that point and Brookfield's Glass Factory, at the lower end of this village, where the brook falls into the Lackawaxen river, considerable damage was done, but less than might been conjectured. At the Glass Works the rise of the water was almost instantaneous. The flood rushed over the falls just above with terrific violence, Mr. J. M. Brookfield's family were still in bed, and barely had time to escape when the dwelling was swept off through the Canal into the river. The books and accounts of the factory were carried along, together with every article of furniture. A tenant house, occupied by Samuel Griffith, just above the falls, was carried away. Mr. Griffith had placed his wife and child in a place of safety, when returning for some clothing, he was carried with the house over the falls. He escaped with a dislocated shoulder. The building in which glass bottles were made also went down stream. The window glass house was badly injured, and 1,000 boxes of window glass were washed into the river. The chair shop of R. J. Knapp was nearly washed way. The bridge over the deep chasm, above White's Axe Factory was destroyed. The canal embankment was broken through, and the canal filled with rubbish and pieces of the different buildings. Mr. Brookfield's piano was picked up at Hawley, 10 miles distant. The wreck is absolutely appalling. / Nearly one hundred men, many of them having families, are thus thrown out of employment. The amount of damage is immense. / The Reservoir covered one hundred acres, and the dam was twenty-three feet high." (*Carbondale Advance*, February 16, 1861, p. 2)

In the same issue of the *Carbondale Advance*, on the same page, is a second article on this washout. Here is that second article:

“We find in the *Herald* an account in some respects more definite. It states that the alarm was given to the families along the stream, by a son of Mr. Isaac Smith, on horseback, barely in time to save their lives. With the utmost effort he was enabled to keep ahead of the flood. This was about 5 o’clock in the morning. / It estimated the damages as follows: Mr. Gaylord Russell, \$1,000; Mr. Gilbert’s Mill Dam, F. Smith’s Saw Mill Dam, Township Bridge to the value of several hundred dollars, Mr. H. Bunnell’s Mill property and Bunnell & Co.’s Tannery damages to both about \$7000; R. J. Knapp \$1,500; H. Terwilliger Shop and tools, \$100; G. White & Bro., Axe factory, damaged \$500; J. M. Brookfield, \$10,000; Henry Duckert and family lost everything but their night clothes; C. Crawley lost his money and clothes. / The Delaware & Hudson Canal Co., not only lost the reservoir dam, but their canal banks are considerably injured. / The plank road bridge is gone and travel interrupted. / The Flood in the Susquehanna was almost so severe and destructive. The Pittston *Gazette* says several buildings in West Pittston have been moved from their foundations, and one swept away. The Bridges at Pittston and Wilkes-Barre were considered in danger. The feeder dam in the canal had been carried away with three boats. The trains upon the Lack. & Bloomsburg Railroad were unable to run below Wyoming. All the farms below Wm. Swetland’s at Wyoming are reported to be submerged. Rev. Thomas P. Hunt’s horses were in danger of being downed in their stalls, and a huge mass of floating ice precluded the possibility of extricating them. His sheep were saved by being taken to the hay loft. A man named Kern was drowned near Wyoming.” (*Carbondale Advance*, February 16, 1861, p. 2)

When Russel F. Lord resigned as Chief Engineer of the D&H Canal on October 20, 1863 (effective January 1, 1864), he recommended that Locks 51-56 at the Neversink, as well as the Neversink Aqueduct, be doubled, and thereby add 200,000 to 300,000 to the capacity of the canal. The recommendation was carried out.

In December 1864, the D&H erected a new Collector’s Office in Honesdale, near the canal bridge. In the *Carbondale Advance* of December 24, 1864, we read:

“The Del. and Hudson Canal Co. have erected a new Collector’s Office, down town, near the canal bridge, and will shortly remove to it.—*Honesdale Dem.*” (*Carbondale Advance*, December 24, 1864, p.2)

Here is an end of the year report for the D&H Canal for 1865. From this report, we learn that

--on December 22, 1865, the D&H stopped loading coal boats for the season at Honesdale

-- By constantly passing up and down the line with scows drawn by five or six teams each a channel was kept open up to Saturday night, and all loaded boats were enabled to get well away from Honesdale before becoming ice-bound.

--D&H coal shipments through the Canal for 1865 were 762,612 tons; for 1864, 848,671 tons

--Pennsylvania Coal Company shipments through the canal for 1865 were 41,575 tons; for 1864, 501,590 tons

-- Contracts have already been made for the building of nearly two hundred boats during the coming winter

--a large contract was awarded by the D&H to boat builders at Williamsport on the West Branch

Here is that end of the year report for 1865 for the D&H Canal:

**THE CANAL.**—On Friday last owing to the increased severity of the weather, the Company stopped loading boats at this point, and all light boats on their way up were ordered to lay up for the Winter.—By constantly passing up and down the line with scows drawn by five or six teams each a channel was kept open up to Saturday night, and all loaded boats were enabled to get well away from Honesdale before becoming ice-bound. / The following is a statement of coal transported on the Delaware & Hudson Canal:

	For week ending Dec. 16, 1865.	For the season.
Del. & Hud. Canal Co.....	23,840	762,612
Pennsylvania Coal Co.....		41,575
Total tons.....	23,840	804,187
For the same period last year:		
	For the week.	For the season.
Del. & Hud. Canal Co.....	17,835	848,671
Pennsylvania Coal Co.....	8,736	501,590
Total tons.....	26,071	1,350,161



The Company are making preparations for an increased business next year.—Contracts have already been made for the building of nearly two hundred boats during the coming winter, the several yards on the line of the canal being run to their full capacity, in addition to a large contract given to builders at Williamsport, on the West Branch.—*Wayne Co. Herald*” (*Carbondale Advance*, December 23, 1865, p. 2)

During the 1866 Canal shipping season, two boat captains, Captain Flannery and Captain Schitzer, made seventeen round trips, Honesdale/Rondout, during the shipping season. Captain Flannery, it appears, used unfair means in order to make those seventeen round trips. (To realize a reasonably rewarding season, a boat operator had to get in 13 to 15 trips. In 1884-1885, about ten trips was the norm.) In the *Carbondale Advance* of December 8, 1866, we read:

“THE CANAL.—Navigation on the Delaware & Hudson Canal will close for this season, in the course of a few days. The last boat will be loaded here [Honesdale] to morrow, and the water will only be kept in the canal long enough to allow the arrival here of freight which left Rondout yesterday. The season has been unusually favorable one both to the Company and their employees. Several boats have made the unusual run of seventeen round trips. The premium runs were made by boats No. 1617, Capt. Flannery and No. 353, Capt. Schitzer. The former off these completed its seventeenth trip at 10 o’clock on Monday last, and the latter at 8 o’clock the same night. When they left Honesdale for the last run down, there were six boats between them; at Creek Locks the number has increased to twenty-four, owing it is said to unfair means on the part of Flannery. We shall give amount of coal shipped for the season in our next.—*Honesdale Herald*.” (*Carbondale Advance*, December 8, 1866, p. 2)

On July 7, 1867, Russel F. Lord, Chief Engineer of the D&H Canal, died. From the notice that was published in the *Carbondale Advance* of July 13, 1867 about the death of Russel F. Lord, we learn several important facts, among them, that

--Russel F. Lord began working for the D&H in 1826 as assistant to Portius R. Root, Esq., resident engineer, who had charge of the construction of the canal.

--Russel F. Lord served as Chief Engineer of the D&H Canal from 1831 to January 1864

“**DEATH OF MR. LORD.** / R. F. Lord, Esq. of Honesdale, died on Sunday morning last [July 7, 1867] at his residence in that place. / He has been for about forty years identified with the town as one of its prominent citizens, and for the greater part of that time has been the Superintendent and Chief Engineer of the Del. & Hud. Canal Co., at that point, and in charge of its large business, and financial disbursements. / Since writing the above, we find a sketch in the *Honesdale Republic* of this week, from which we make the following extract. We have in view especially its value in fixing dates: / Mr. Lord was born in Rome, Oneida county, New York, August 17, 1802. He was educated for a civil engineer under the patronage of Geo. Huntington,

Esq., an influential and wealthy citizen of that town. In March, 1826, he entered into the service of the Delaware and Hudson Canal Company, as assistant to Portius R. Root, Esq., resident engineer, who had charge of the construction of the canal. In the summer of 1827, he was made resident engineer on the Lackawaxen section of the canal, which post he held until 1830. In 1829, he came to Honesdale, boarding with Isaac P Foster, Esq., whose dwelling house was the only one then here. During the year 1830 he had charge of the Lackawaxen and Delaware divisions of the canal; and in 1831, became chief engineer. This responsible position he filled till January, 1864, when he resigned and accepted the easier place of consulting engineer, which was better suited to his increased years and infirmities. This position he occupied till his death.” (*Carbondale Advance*, July 13, 1867, p. 2)

## 1870

### Tolls Received on the Canal, 1830-1872:

STATEMENT OF TOLLS			
Statement of Tolls received on the Delaware and Hudson Canal and Railroad in each year after completion of the Works.			
1830	\$ 16,422.44	1852	\$ 293,174.67
1831	20,554.64	1853	378,479.83
1832	28,717.51	1854	587,349.52
1833	30,004.58	1855	652,362.94
1834	36,946.07	1856	583,737.86
1835	41,976.82	1857	435,198.44
1836	45,154.73	1858	307,698.11
1837	44,832.42	1859	311,597.79
1838	40,328.38	1860	397,677.99
1839	40,095.26	1861	367,953.56
1840	35,450.46	1862	316,376.97
1841	39,388.19	1863	594,822.67
1842	33,894.92	1864	1,213,570.46
1843	30,996.53	1865	201,679.38
1844	33,525.61	1866	118,482.95
1845	25,880.92	1867	96,530.05
1846	26,068.65	1868	89,846.57
1847	38,971.34	1869	110,172.86
1848	46,548.54	1870	110,258.25
1849	34,817.95	1871	123,836.22
1850	97,999.15	1872	109,786.75
1851	158,441.96		
Total			\$8,714,610.91

A fearsome explosion and fire took place in August 1872 on Canal boat No. 853, when a young lad by the name of Albert Lewis attempted to start a fire in the stove in the cabin by pouring kerosene into the stove. Here is the account of the fire that resulted that was published in the *Carbondale Leader* of August 10, 1872:

“The *Honesdale Herald* says: ‘On Wednesday afternoon of last week, Albert Lewis, a young lad employed on the Delaware & Hudson Canal boat 853, then lying at Rondout, went to light a fire in the stove which was in the cabin. The kindling wood being somewhat damp from the rain and not igniting with sufficient rapidity the boy poured kerosene oil upon it with the usual result—an explosion. The stove was shattered, the boy horribly burned from his thighs to his feet, and by severe exertions on the part of the crew the boat was saved from being destroyed by fire. The force of the explosion was so great as to blow the spout and bottom from the oil can, and the veneering from a looking glass frame hanging in the cabin was completely blown off.’” (*Carbondale Leader*, August 10, 1872, p. 3)

The body of a man by the name of Reynolds was found in the D&H canal at Honesdale when the water was drained from the Canal preparatory to cleaning it. Reynolds, in a drunken state, apparently fell into the canal and drowned.

“The water was drawn from the canal basin on Saturday night, preparatory to cleaning it, and on Sunday morning the body of an unknown man was discovered lying in the mud at the bottom. Coroner Patmor was notified and he impaneled the following jury: Fred Harnett, John King, John Lorcher, Michel Brannen, Jeffrey O’Connell, and Wm. T Fuller, who, after hearing the testimony, returned a verdict of ‘accidental drowning.’ The name of the man was supposed to be Reynolds. The man was taken to Brown’s undertaking establishment on Sunday afternoon, and on Monday morning preparations were made for its burial, when a woman arrived in town from Carbondale, and asked to see the remains. She instantly recognized the body as that of her husband; said his name was Reynolds; was an intemperate man, and had left home in a drunken state, in which condition he probably fell in the canal and met his fate. He leaves a wife and three little children in destitute circumstances. He was about thirty-six years of age. The remains were taken to Carbondale for burial.—*Honesdale Citizen*.” (*Carbondale Advance*, June 5, 1875, p. 3)

Fifteen people drowned in D&H Canal in 1875:

“Fifteen people were accidentally drowned in the D&H Canal during the year.” (*Honesdale Citizen*, December 23, 1875)

Shipments of coal over the D&H Canal for 1876 were down from 1875:



“From the opening of navigation this season, up to Saturday last, there have been 131 days of boating. Last week there were 366 cargoes cleared from Honesdale, representing 46,848 tons of coal, being a daily average of 7,808 tons. During September there were twenty-four days of boating, on which 1,172 cargoes were loaded, making a total of 150,016 tons, or 6,250 tons a day. For this season thus far, 5,416 boats have been cleared, carrying 689,698 tons—a daily average of 5,265 tons. Up to the first of October last year the amount of coal carried down the canal was 1,195,832 tons, showing this season’s decrease to be 506,134 tons.—*Honesdale Chronicle*.” (*Carbondale Leader*, October 7, 1876, p. 3)

## 1880

Freight and passenger traffic on the D&H about doubled in late 1887. In the *Carbondale Leader* of November 15, 1887, we read:

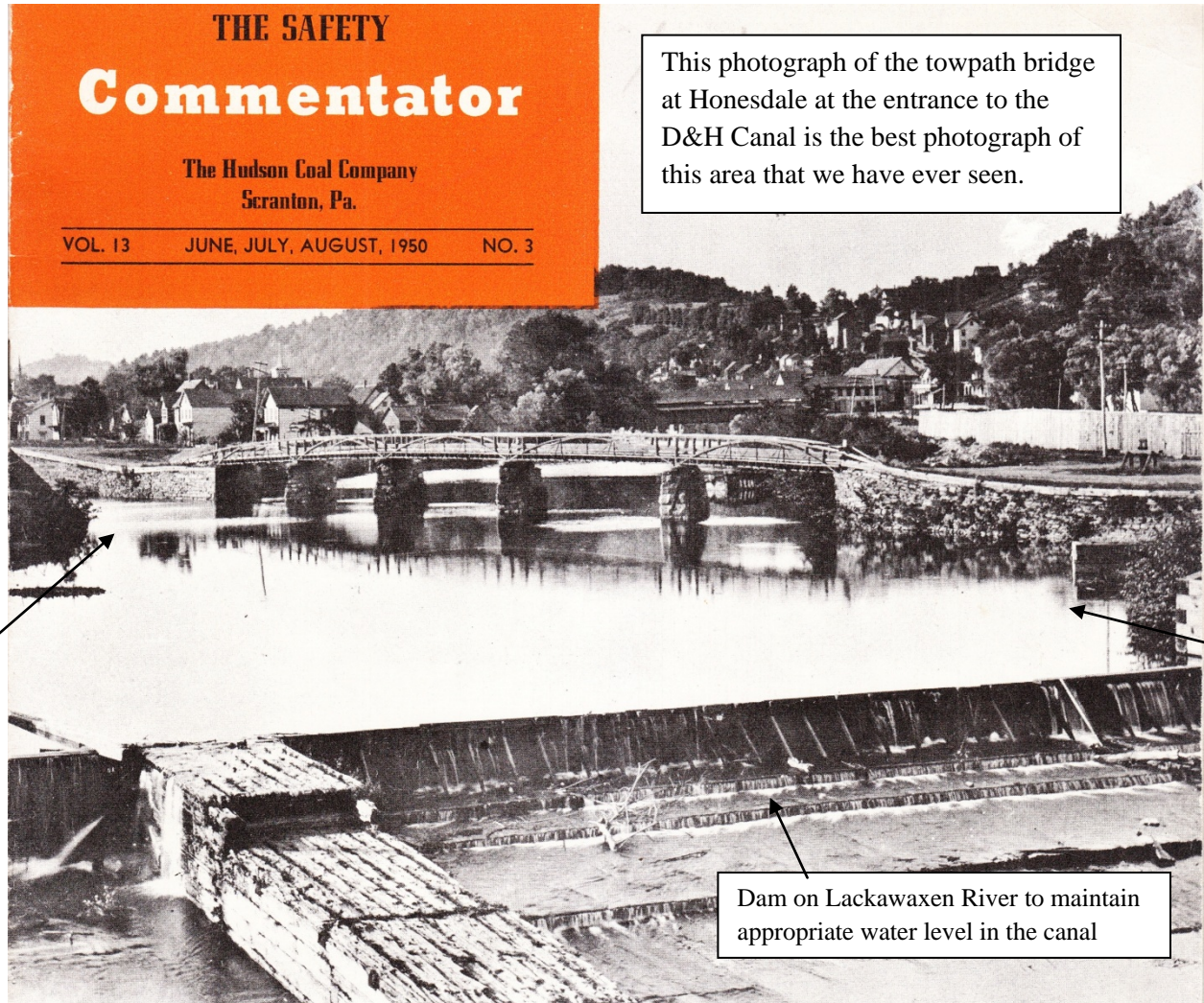
**"The D. & H. Road.** / During the past few months both freight and passenger traffic has about doubly increased on the Pennsylvania Division of the D. & H. Road, which is an indication that the road is becoming popular. This can alone be attributed to good management, as long as such wide awake men as General Passenger Agent Burdick, District Passenger and Freight Agent Wheeler and Superintendent Manville are at the helm. The road was never been in better shape and additional improvements are being constantly added. The passenger trains make close connections with all roads, and aside from that, the road is one of the safest in the country. The D. & H. Gravity Road, extending from Carbondale to Honesdale, is being liberally patronized, and the ride, at this time of year, is certainly an invigorating one. This road is open the whole year round—[*Wilkes-Barre Newsdealer*." (*Carbondale Leader*, November 15, 1887, p. 4)

## **D&H Canal Miscellany**

Given below are photographs or data that relate to the D&H Canal:

1. Excellent Photo of Beginning of D&H Canal (p. 389)
2. Good Photograph of the Basin Bridge over the D&H Canal at Honesdale (p. 390)
3. Lord Family Data (pp. 391-392)
4. Interesting Biographical Data about Jacob B. Fitch (pp. 392-393)
5. "The Canal is Doomed. . .," 1883 (p. 393)
6. *Kimble's Station, or the Narrows of the Lackawaxen* (pp. 393-395)
7. Notes on a Walk along the D&H Canal, April 23, 2014 (pp. 395-397)
8. Hensel Stereocard No. 925: *Starting Point of D. & H. Canal* (p. 397)
9. Packet Service on the D&H Canal (pp. 398-400)
10. D&H Canal Freight Lines, 1829-1887 (pp. 401-432)
11. Tariff of Tolls: D&H Canal, 1828-1859 (pp. 433-461)
12. *Kingston, N. Y., Boat building at Rondout* (p. 462)

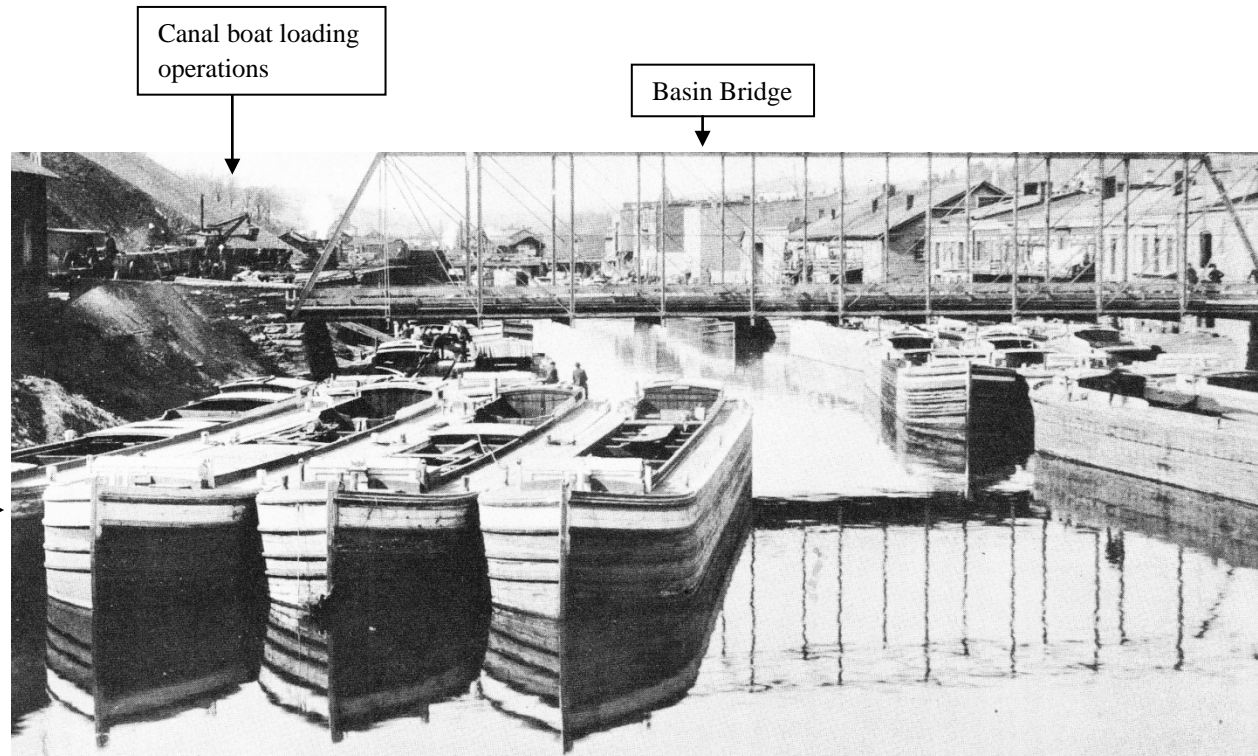
## 1. Excellent Photograph of the beginning of the D&H Canal



In the caption on this photograph on the cover of The Hudson Coal Company *The Safety Commentator*, we read: ". . . Empty barges [they were not *barges*, they were *boats*] were drawn in from the right side of the picture and off to the left side where the basins and loading docks were situated. When loaded they retraced their route but when they approached the dam, a pilot, who specialized in the waters of the Honesdale area, was called on to direct the steering of the vessel until the canal was safely entered. This was because there was danger of the canal boat being swept over the dam if unskillfully handled." This is the only reference we have ever seen to a pilot who directed the steering of the loaded boats into the canal.



## 2. Good Photograph of the Basin Bridge over the D&H Canal at Honesdale



*D&H Canal Basin, Honesdale.* This photograph is given on page 4 of The Hudson Coal Company *The Safety Commentator*, Volume 13, No. 3, June, July, August 1950. The caption given there with this photograph contains inaccurate and/or misleading statements and should be disregarded.

## 3. Lord Family Data

From a poor quality Xerox copy of a newspaper clipping, dated February 28, 1922, in the holdings of the Carbondale D&H Transportation Museum, titled *Living Representative of Old D. & H. Gravity Canal*, we learn many interesting facts about Z. Jessup Lord (photo in article) and the Lord family.

--ZJL retired, age 76, on a pension on December 1, 1921 after 59 years of continuous service to the D&H; he began his D&H career as a telegrapher and clerk on the D&H Canal in 1862, later being transferred to the Gravity Railroad in Carbondale where he worked initially as a clerk and then as a telegrapher. At the time of his retirement he was a telegrapher at Wilkes-Barre.

--On the question of loading the canal boats at Honesdale, ZJL noted: "When the canal was first built the coal was dumped on the ground from the [Gravity coal] cars and loaded into the boats by wheelbarrow. Later, this mode of transfer was improved upon and the boats were loaded direct from the cars by shoveling coal into slides and screens."

--ZJL on D&H Canal boat crews and operations: "The crew of the canal boat consisted of a captain, steersman and driver, who, of necessity, lived on the boats. The canal was kept open as late in the season as possible with the aid of ice-breakers. . . . Two horses or mules would draw one boat through a division of the canal, being relieved at each division headquarters, the movement averaging 35 boats per day."

--"At the time Mr. Lord entered the service [1862], the canal was divided into four divisions, each under a superintendent. He laughingly told [to the interviewer] of the time when the superintendent of the canal rode the length of his division each day on horseback, and each third month carried the pay of the canal forces on the division in his saddle bag and paid off."

--ZJL on the behavior of the boat captains at the weigh lock at Hawley: "The Pennsylvania Coal company basin at Hawley was located just north of the weigh lock, and Mr. Lord recalls the constant conflict between the captains of the Delaware and Hudson canal boats and those of the Pennsylvania Coal company for first place at the weigh lock. This furnished continual excitement for the inhabitants of the town, and it was one of their diversions to gather at the weigh lock and view the maneuvers of rival captains whose boats were scheduled to leave at about the same time."

--"Mr. Lord tells us whenever there was a break in the telegraph line he was called to the point of the trouble, taking with him a small pocket instrument and remained there until the line was repaired."

--In recalling his days on the canal and the railroad, ZJL noted that in the old days ". . . the only means of illumination at night was pine knots,\* which were brought in by the back-woodsmen."

Pine knots are formed at the junction of a branch and the trunk of a pine tree. When candles or oil for lamps were not available, these resin-filled knots were used both to start fires and to make torches. When burnt indoors they mimic the smell of the pine woods.

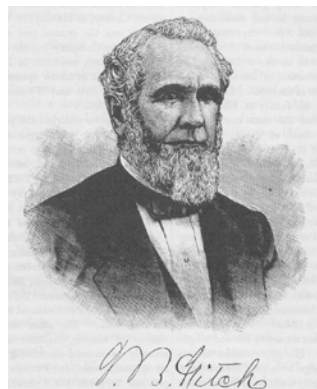
--Before the well-known D&H/PCC dispute over fees for use by the PCC of the D&H Canal, ZJL noted that "remittances [to the D&H] for the amounts of the tolls [due from the PCC] being made by check. This method was changed and payments were made in cash after a lawsuit which occurred over a dispute concerning the proper amounts that were payable."

--ZJL's father, Solomon Z. Lord, was collector of tolls on the canal at Hawley at the time of the D&H/PCC dispute. "It was his [SZL] duty to carry the toll money from Hawley to Honesdale Tuesday and Friday of each week. The payments amounted to from forty to fifty thousand dollars. Mr. Lord's [ZJL's] family was well represented in the Canal Company at this time, his uncle, Russel F. Lord, also being employed at [sic, as] chief engineer of the canal."

#### 4. Interesting Biographical Data about Jacob B. Fitch

Mathews' *History of Wayne, Pike and Monroe Counties, Pennsylvania* (1886), we read the following about Jacob B. Fitch (pp. 251-52): "Jacob B. Fitch, of Hawley, is one of the oldest employees of the Delaware and Hudson Canal Company. His father, Benjamin Fitch, a native of Connecticut, served as lieutenant under General Brown, in the War of 1812. . .[Jacob was] born November 22, 1818. . . In 1843 he came to Wayne County, Pa., for the purpose of working at this trade [carpenter and joiner]; but finding an opportunity to enter the employ of the Delaware and Hudson Canal Company, himself and brother engaged with that company and began building locks and doing general carpenter work. After two years he was made foreman of the construction and repair department on a part of the Pennsylvania Division of the canal, and from 1846 to 1849 he was at Lackawaxen, engaged in the construction of the aqueducts at that place, and feeders of the canal. In the latter year he settled with his family at Hawley and continued in charge of the same work for the company until the death of T. H. R. Tracy, the superintendent of the Pennsylvania Division of the canal, in 1856, when Mr. Fitch was selected to fill this vacancy, and until the fall of 1884, the time of his resignation on account of ill health, a period of forty-one years since his first engagement with the company, he has been a trusted and efficient employee and official whose honor and integrity in all his business relations are beyond reproach. He has during this time erected several residences for the company, engaged in lumbering, and he erected his present residence, on the southeastern slope of the Lackawaxen, at Hawley in 1850. . . "

Here is the likeness of Jacob B. Fitch that is given on page 251 of *Mathews*:





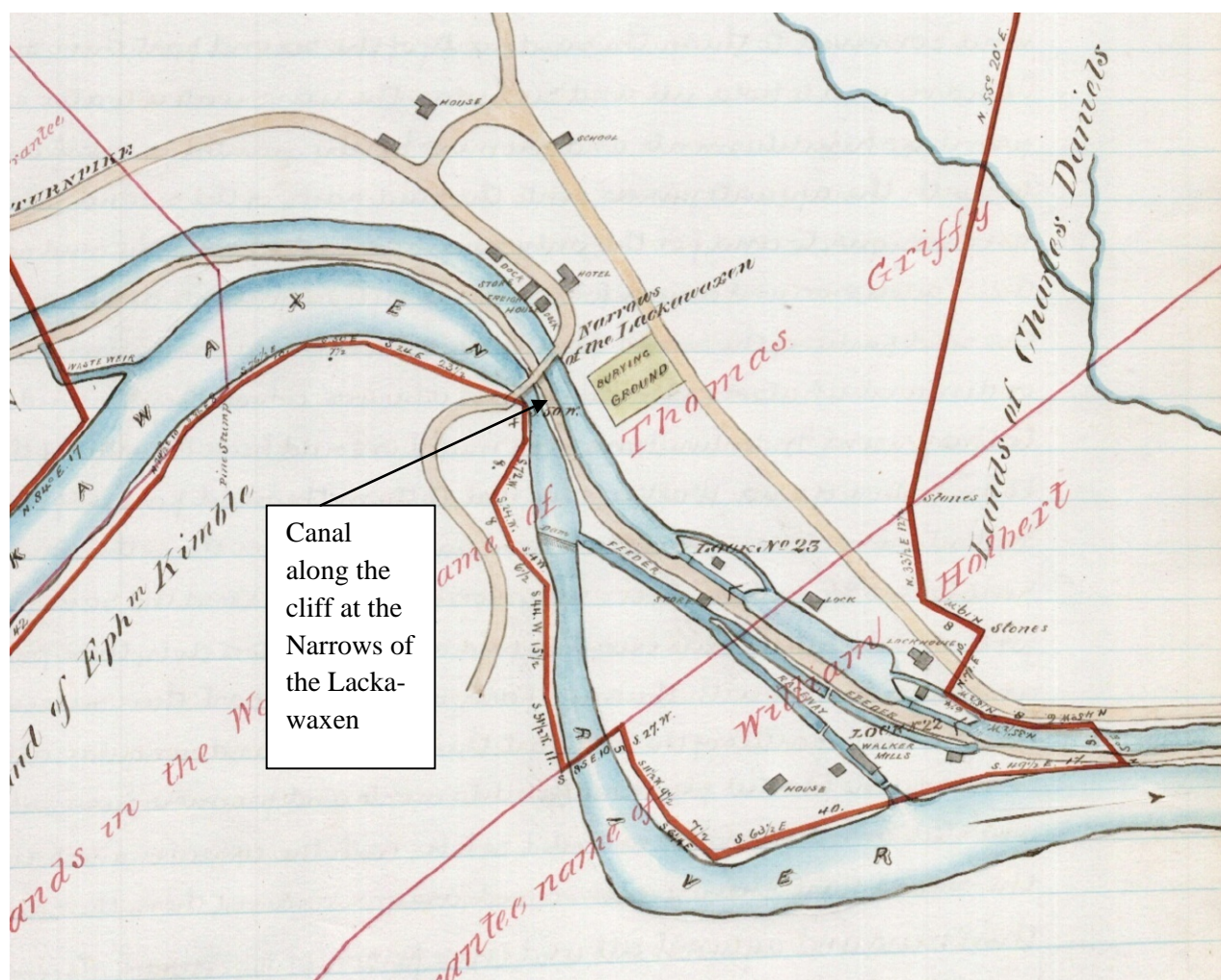
## 5. “The Canal is Doomed. . ,” 1883

“A corps of engineers under the direction of Superintendent Manville, of Delaware & Hudson Canal Company fame, drove their first stakes in the Honesdale basin one week ago last Monday. Last Saturday they passed Kimble’s station (or what is more properly known to the people of the county as the Narrows of the Lackawaxen). Before the *Dispatch* goes to press they will be at Rowland’s and probably reach Lackawaxen in the early part of next week. From there the route was surveyed to Rondout last winter, and a charter obtained for a railroad from the New York State Legislature. The general railroad law of 1874 gives the company full swing in Pennsylvania. The canal is doomed and the year 1883 will see the old thoroughfare swept out of existence and the iron horse take the place of flesh and blood on the tow path.—*Milford Dispatch*. (*Carbondale Leader*, January 27, 1882, p. 4)

## 6. *Kimble’s Station*, or the *Narrows of the Lackawaxen*

Between Locks 23 and 24, the builders of the D&H Canal had to construct a massive 30-foot high dry retaining wall in the perpendicular rocks above the Lackawaxen River at the Narrows of the Lackawaxen (40 feet wide there) to carry the canal and the towpath.

A detailed view of this section of the canal is given on the map that illustrates the deed, dated November 19, 1859, between R. F. Lord and wife / Jacob P. Fitch and wife and The Delaware and Hudson Canal Company. The map is on page 313; the deed pp. 310-312. Here is that map:



The D&H Canal connected the waters of a forest stream, the Lackawaxen Creek, at Honesdale, with the waters of the mighty Hudson River at Rondout.

The level ground at the top of this wall, where the canal once flowed, now covered with trees, is seen in the photo given below, that was taken by the author on October 20, 2010. On the far left in this photo, can be seen the vehicular bridge across the Lackawaxen River.



## **7. Notes on a Walk along the D&H Canal, April 23, 2014**

Date: April 25, 2014

To: Bill Merchant and Cliff Robinson

From: S. R. Powell

Subject: Given below is the revised version of S. Robert Powell's memo of 04/24/2014 to Bill and Cliff

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Walk along the towing path of the D&H Canal from Westbrookville to the intersection of the canal and Route 209. (See *Barber*, p. 98, Westbrookville: 47.54-48.64). This section of the canal is a part of the 17-mile long Summit Level, from (east to west) Summitville (Lock 50) to Lock 51 (Pie lock). Walk hosted by Cliff Robinson (Delaware & Hudson Canal and Gravity Railroad



Conservancy) on Wednesday, April 23, 2014, 11 A. M. to 12:30 P.M. Walk preceded the quarterly meeting of the D&H Transportation Heritage Council, 1-4 P.M., that day, at Cuddebackville.

--the group walked on the towing path of the canal, as enlarged in 1848 to a depth of 6 feet, passing by Richardson's Basin, Richardson's Bridge abutments, Skinner's Basin, and over the new towpath bridge, just east of Route 209, that was installed there, at the site of the former Staunten's Basin, by the Delaware & Hudson Canal and Gravity Railroad Conservancy in 2013. (See note from Cliff Robinson below.)

--just before Richardson's Basin (towing path very wide; towing path embankment very high), D&HTHC member, Bill Merchant (Executive Director, D&H Canal Historical Society and Museum, High Falls) observed that in the canal itself, on the towing path side, there is a plateau/shelf about three feet wide and about 15 inches below the top of the canal prism (see *Barber*, p. 98, 48.13). (A tape measure was not available during the walk, so those two measurements are approximations. On a walk through this area at a future date, precise measurements of plateau/shelf will be taken. See note from Bill Merchant below.)

--"What are we looking at?" asked S. R. Powell.

--After some discussion of possible explanations, Bill Merchant offered the following hypothesis: "What we're looking at, I believe, is what remains of the towpath enlargement in 1845-47, when the canal was enlarged to 5 ½ feet deep. There was no need to remove that portion of the 1845-47 towpath when the canal was made 6" deeper in 1848 and a new and higher towpath was installed, because the empty canal boats could pass over that part of the 1845-47 towpath without grounding. The loaded boats would surely have grounded on that plateau/shelf and so they were probably kept on the berme side of the canal."

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Note from Bill Merchant in reviewing the original draft of this memo:

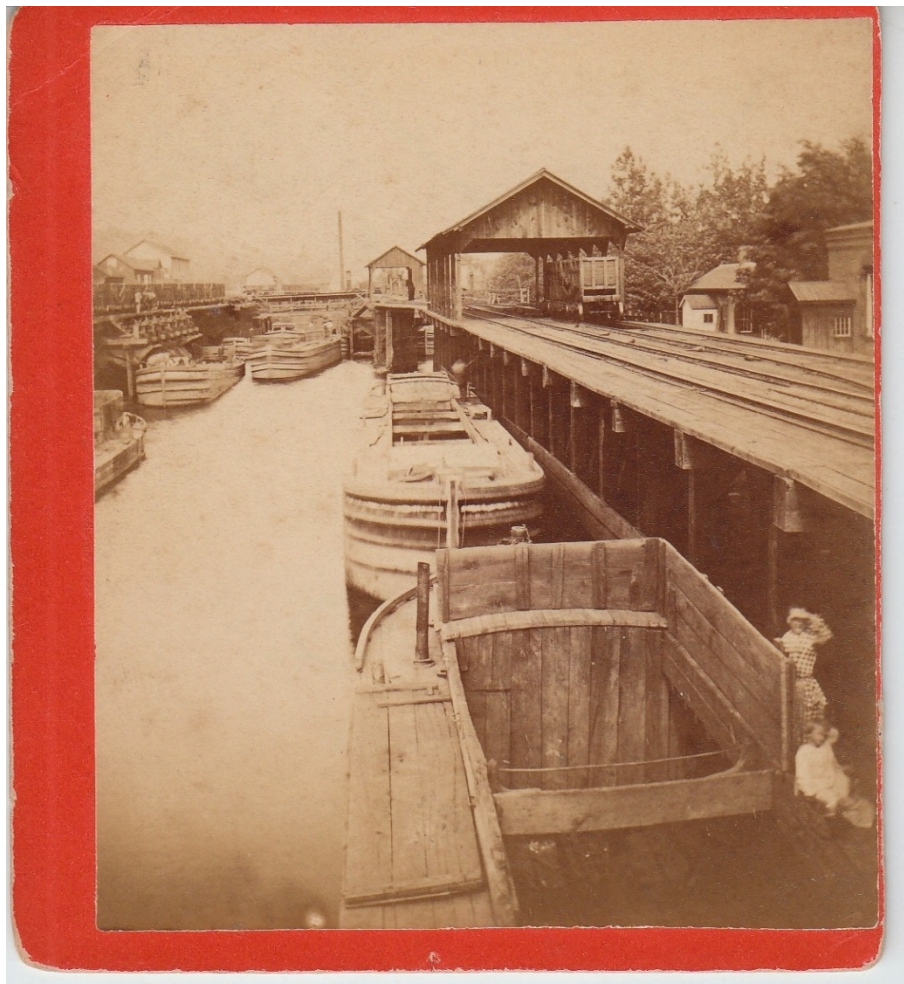
The only thing I see is I think it is closer to 3' wide and possibly a bit more than a foot below the towing path. It is even clearer on the section of extant canal north of where we were, where I first observed it, in the section parallel to the Bashakill. Lots of great extant stuff there, especially if you drive in at Stonefield Road, a dirt NYS Parks access right off Route 209 and go north. Might be a great spot to hike some other meeting... You have to figure that it was under water for 50 years so it had been eroded but you can easily see how they enlarged by adding to the towing path side. I think Robert's surmise about the light boats taking that side is probable, too. I have also been pondering the question of how wide it wound up being. Many of the books that say it was 50 feet wide by the final enlargement. I have found sections, like the beginning of the path

in Cuddebackville just after the Pie Lock that is (I paced it off) but I think it was narrower in many sections, too. 32', as you quoted Cliff, seems to be a minimum and one of the books said 40' to 50'... remember the largest boats were 14 1/2' wide so only 32' seems a bit tight... I plan to bring a 50' tape measure and start measuring extant sections...

Note from Cliff Robinson in reviewing the original draft of this memo:

I would add "at the site of the former Staunten's Basin." after talking about the new bridge. Other than that I think it is accurate, insofar as an opinion can be.

**8. Hensel Stereocard No. 925: *Starting Point of D. & H. Canal***



These folks appear to be looking at the photographer taking this photograph.

## 9. Packet Service on the D&H Canal

W. J. Coughtry, a reliable and early historian of the Delaware and Hudson Canal Company, noted in 1928 that the D&H inaugurated a packet service between Honesdale and Rondout on October 7, 1829 (two days before the first coal shipments were made from Carbondale), with two boats making three trips weekly:

"... Although the canal was primarily constructed for the express purpose of moving anthracite, traffic became general in 1829. On October 7 of that year the company inaugurated a packet service between Honesdale and Rondout, two boats, the *Luther Bradish* and the *Silas Wright, Jr.*, elegantly fitted up, making three trips weekly. . . (W. J. Coughtry, Recorder, titled "A Century of Anthracite," that was published in the December 15, 1928 issue of *The Delaware and Hudson Railroad Bulletin*, pp. 373-77, 79-80)

In the following year, June 16-23, 1830, Philip Hone with a large party of friends traveled from New York to Honesdale to Carbondale over the D&H Canal (traveling on the *Silas Wright, Jr.*) and Gravity Railroad. This historic trip is described in *Century of Progress* as follows:

"Between June 16 and June 23, 1830, Mr. Hone, with a large party of friends, traveled from New York to Honesdale, taking the steamboat *Albany* up the Hudson river and, from Bolton, the packet boat *Silas Wright, Jr.* through the company's canal. There were ladies in the party, which proceeded slowly, stopping over night, first at Bolton, the second night at Wurtsboro, and the third night at the mouth of the Lackawaxen. They arrived at Honesdale on the nineteenth, which was Saturday, at four in the afternoon. On Sunday the entire party attended church at Honesdale, some returning to the second service at two o'clock, after which all dined together. On Tuesday, June 22, they traveled from Honesdale to Carbondale over the railroad. This appears to have been the first use of this railroad for passenger travel, and for many years thereafter no passengers were regularly carried. The arrangements made for the comfort of the party, consisting of twenty persons, were crude but satisfactory. They were accommodated in two coal cars which formed the train. These cars had been provided with seats and in other respects made tolerably convenient. . . They reached Carbondale at five o'clock and dined at Townsend's Hotel." (*COP*, pp. 65-66)

A second visit to Honesdale and Carbondale by Philip Hone (this time traveling on the *Luther Bradish*) in August of 1831 is described in *Century of Progress* (pp. 77-78) as follows:

"This year [1831] he [Philip Hone] embarked at Bolton, on the packet boat *Luther Bradish*, between eight and nine o'clock on the morning of August 18, 1831, and at once encountered the hottest day he had ever experienced. His diary relates that nothing but pride prevented him from abandoning the trip. The next day was extremely warm, but not quite so uncomfortable. Mr.



Hone slept during two nights on the packet boat, and reached Carbondale at four o'clock on the afternoon of August 20, employing the remainder of the afternoon in visiting the mines in company with James Archbald, then superintendent of the railway. . . He records his pleasure and astonishment 'at the immense deal of work which has been performed since my visit last summer.' He now found seven or eight mines in full operation and excavations 'in the mountain to the extent of 400 feet, with galleries and chambers branching off in various directions.' He observed that as the coal was removed, wooden pillars were introduced to support the roof, and that the coal was conveyed from the interior of each mine, by a lateral railway, to the point at which the coal wagons were 'filled,' just prior to the commencement of the journey over the railroad to the canal. One of the galleries passed under the bed of the Lackawanna river to a point perhaps three hundred feet beyond its further shore, where it terminated in a shaft, forty feet in depth, constructed for the purpose of providing ventilation for the inner chambers.' / Returning to Honesdale on the afternoon of Sunday, August 21, Mr. Hone found pleasure in witnessing the reverential manner in which its working population kept sacred the Sabbath. . . 'So much for a good example; the company suspends its operations of every sort on Sunday.' On each week day three hundred tons of coal were carried over the railroad. . . Mr. Hone left Honesdale by packet boat early in the morning of August 23, and by this means, and then by the stage from Wurtsboro to Newburgh and by the *North America* on the Hudson river, reached home at seven o'clock in the evening, on the following day."

In 1833 Washington Swart announced regular freight and passenger service on his "River and Canal Line," between Honesdale and New York City. His ad, from *Northern Pennsylvanian*, Thursday, February 21, 1833, p. 4, is given below. In this ad, Swart announces that he has purchased the two D&H canal packet boats (*Silas Wright* and *Luther Bradish*) that were the pioneer packet boats on the D&H Canal in 1829. Here is that ad:

## **WASHINGTON SWART'S**

River and Canal Line,

1833

### **The Subscriber**

Informs his friends and the public in his arrangements for the year 1833, he has considerably improved and enlarged his accommodations for the transportation of FREIGHT.

He will also have two good and substantial

## **SLOOPS,**

Which will sail in the following order:

One sloop will leave RONDOUT every Friday, and one leave NEW YORK every Saturday. In addition to which he has chartered the STEAMBOAT

## **HUDSON**

For the carrying of both Freight and passengers--a vessel both speed and possessing superior accommodations. The Steam Boat Hudson will sail as follows:

From Rondout every Tuesday and Friday at 2 o'clock P.M. From New York every Wednesday and Saturday at 5 o'clock.

The Subscriber has also extended his business by the purchase of two CANAL BOATS.

## **SILAS WRIGHT**

And

## **LUTHER BRADISH**

Which were constructed for packet boats and covered, and so arranged as to prevent any species of Merchandize from the effect of bad weather. One of the said Canal Boats will leave RONDOUT and HONESDALE every Tuesday.--The whole of the business will be conducted by experienced men, and the most implicit reliance can be placed in the prompt and safe conveyance of any articles trusted to them.

Application for FREIGHT or PASSAGE may be made in New York, at the Subscriber's office, No. 42, West Street, or on board vessel.

**Washington Swart.**

Kingston, January 25, 1833--1t

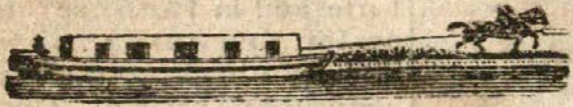
*(Northern Pennsylvanian, Thursday, February 21, 1833, p. 4)*

## 10. D&H Canal Freight Lines

1829

### J. & G. W. ROSS

Notice in *Dundaff Republican, and Canal & Rail Road Intelligencer*, August 27, 1829, p. 3; also October 8, 1829, p. 3.



THE subscribers respectfully offer their services to Merchants and others in the transportation of Goods and Produce on the Hudson River, and on the Delaware and Hudson Canal.

One of their sloops leaves Eddysville, (the outlet of the Canal) and the foot of Dey street, New York, every Thursday. And they have made such arrangements on the Canal as enable them to deliver freight at Honesdale, (or any other point on the Canal,) with safety and expedition, and at rates much lower than has been heretofore done.

The subscribers having been engaged in this business since the commencement of the Canal, (and the Canal being now in successful operation to Honesdale,) they can with confidence recommend this as the cheapest, safest, and most expeditious mode of conveyance.

Reference, Russell, Wilcox & Co. Honesdale. Apply at Darsylva & Moores, New York, west one door from corner of Dey street or on board sloop.

J. & G. W. ROSS. }  
Eddysville, Kingston, Ulster Co. }  
August 27, 1829.

In the freight business between New York City and Honesdale, August 27, 1829.




1830

## Honesdale Temperance Transportation Line

Honesdale Temperance Transportation Line (ad in April 21, 1830, p. 3; April 28, 1830, p. 3; May 5, 1830, p. 4; and May 19, 1830, p. 4; June 30, 1830, p. 4; and perhaps other issues, *Dundaff Republican, and Canal & Rail Road Intelligencer*)

HONESDALE  
**TEMPERANCE**  
TRANSPORTATION LINE.



**Merchants and the public are hereby respectfully informed that this line is now organized and will commence running on the Delaware and Hudson canal between *Honesdale and Kingston*, daily, (Sundays excepted) as soon as the water is let into the canal.**

**This line is composed of twelve good boats, a sufficient number of good horses and careful Boatmen. Arrangements are so made that one or more boats can leave *Kings* *ton* every day except Sundays with back loading; all merchandize and other freight will be taken at**

***THERON SKEEL'S DOCK*;**  
**or at any landing at *Bolton* or *Eddyville*; and every reasonable exertion will be made to expedite the transportation of goods from the city of**

***NEW YORK TO HONESDALE***  
**at the head of the canal. The boats upon this line will be covered with an awning (or oil cloth,) and the proprietors will hold themselves responsible for all damages that may be sustained upon property, (through neglect while on board of their boats.**

“... twelve good boats, a sufficient number of good horses and careful Boatmen...”

Terms of transportation by this line will be as low as by any line on the canal.

*Oats, Rye, Butter, and Flour,* will be taken in payment for freight exclusive of canal tolls, if delivered at the time of taking away freight.

*Foster & Roe* are agents for the line at Honesdale and will attend to delivering and receiving freight on all goods brought by this line. No charge for storage.

Any communication to them by mail or otherwise respecting the business of the line, will be promptly attended to.

The proprietors would hereby solicit the patronage of their friends and the public generally.

N. B. All goods sent by this line should be marked either **HONESDALE TEMPERANCE LINE** or to the care of **FOSTER & ROE**.

*B. BURRITT*

*P. I. STEWART*

*J. GIDDINGS*

*S. S. CHAMBERLIN*

*J. ALWORTH, & Co.*

Honesdale, April 10th, 1830.

9—6m.




1830

**John M. Poor**

Goods received in Carbondale, via the D&H Canal and Railroad, August 1830:

**JOHN M. POOR**  
WOULD respectfully inform  
his friends and the public gener-  
ally that he has just received a  
lot of


**Mackerel,**  
IN WHOLE AND HALF  
BARRELS,



**Dry Cod-Fish,**  
**Liverpool Salt,**

Together with an extensive assort-  
ment of

**Dry Goods,**  
**Groceries,**



**Crockery, &c,**

which he will sell at reduced pri-  
ces for CASH.  
Carbondale, July 14, 1830.  
[23—31.]

*Dundaff Republican, and Canal & Rail Road Intelligencer, August 4, 1830, p. 3*



1830

*Dundaff Republican, and Canal & Rail Road Intelligencer*, August 4, 1830, p. 3

AT  
**POOR'S**  
**Store,**  
**Carbondale,**

CAN be found in quantities, and quality to suit purchasers,  
an extensive assortment of

**Dry Goods, Groceries, Hardware, & Crockery,**  
Consisting in part, as follows:

Coarse salt,	Hollow ware,
Fine do.	Frying-pans & Grid-
Mackerel,	dles,
Dry Cod Fish,	Cut & wrought nails,
Cod Fish's Tongues &	Brittannia Tea Pots,
ounds,	Setts of celtic china,

Havanna & St. Croix	tea cups do. do.
sugars,	Plates do. do.
new Orleans and west	Fine boots and shoes,
India Molasses,	Ladies' morocco boots
rice,	do. Prunella shoes,
superior coffee,	Blue, }
Old Hyson, }	Brown, }
Young do. }	Green, }
Hyson skin, }	Mixed }
cavendish, }	30 pieces of rich dark
Wights' Hand, }	Calicoes----winter
Riel's fine cut, }	colours,
blistered steel,	Domestick Muslins,
cast do.	etc. etc.

ANY Goods in the Grocery line will be sold by the 100 wt. or  
Barrel, at a small advance from New York prices, for CASH.  
November 22, 1830.

1833

**WASHINGTON SWART'S River and Canal Line, 1833**

Space ad in *Northern Pennsylvanian*, Thursday, February 21, 1833, p. 4

**WASHINGTON SWART'S / River and Canal Line, / 1833 /** The Subscriber / Informs his friends and the public in his arrangements for the year 1833, he has considerably improved and enlarged his accommodations for the transportation of FREIGHT. / He will also have two good and substantial / SLOOPS, / Which will sail in the following order: / One sloop will leave RONDOUT every Friday, and one leave NEW YORK every Saturday. In addition to which he has chartered the STEAMBOAT / HUDSON / For the carrying of both Freight and passengers--a vessel both speed and possessing superior accommodations. The Steam Boat Hudson will sail as follows: / From Rondout every Tuesday and Friday at 2 o'clock P.M. From New York every Wednesday and Saturday at 5 o'clock. / The Subscriber has also extended his business by the purchase of two CANAL BOATS. / SILAS WRIGHT / And / LUTHER BRADISH / Which were constructed for packet boats and covered, and so arranged as to prevent any species of Merchandize from the effect of bad weather. One of the said Canal Boats will leave RONDOUT and HONESDALE every Tuesday.--The whole of the business will be conducted by experienced men, and the most implicit reliance can be placed in the prompt and safe conveyance of any articles trusted to them. / Application for FREIGHT or PASSAGE may be made in New York, at the Subscriber's office, No. 42, West Street, or on board vessel. / Washington Swart. / Kingston, January 25, 1833--1t (*Northern Pennsylvanian*, Thursday, February 21, 1833, p. 4; also on page 4 in *Northern Pennsylvanian*, Thursday, February 28, 1833)

1833

**CORNELL & GEDNEY'S Delaware and Hudson Canal Transportation Line**

Space ad in *Northern Pennsylvanian*, Thursday, February 28, 1833, p. 3:

**CORNELL\* & GEDNEY'S / Delaware and Hudson Canal / Transportation Line, For 1833/**

Sloops, MERCHANT and ALFRED. / The Subscribers, respectfully inform their friends, and the public in general, that they continue / **Freighting and Forwarding**, / From their old stand, opposite the Tide Water Lock at Eddyville, known as FREER'S LANDING. / The Subscribers, return thanks to the public for past favors, and solicit a continuance of the same. / They have two substantial SLOOPS, commanded by experienced men, which will ply between Eddyville and New York, as follows: one of said sloops will sail from Eddyville every THURSDAY, and one from the foot of Warren Street, New York, every FRIDAY, regularly throughout the season of Navigation. All freight, gratefully received and punctually attended to, by PETER CORNELL, at Eddyville, and JOHN B. GEDNEY, New York, and forwarded with dispatch, on moderate terms.

Office, corner of Warren and West streets. / In connection with the above, they have two CANAL BOATS, for the Transportation of MERCHANDIZE and LUMBER to and from Honesdale. / **Peter Cornell / John B. Gedney** / References--Thomas C. Butler, Joseph Strong, Lockwood & Bates, S. & A. Denison, Wardell & M'Coon, Loring Andrews, New York. / **Cornell & Gedney** / Will keep on hand, and for sale, WHOLESALE AND RETAIL, (at their STORE at the LANDING,) / Molasses, Rum, Sugar, Pork, Fish, Flour, Salt, Plaster, Iron Steel, Nails, etc. etc. / Freer's Landing, Jan. 28, 1833--48 3m (*Northern Pennsylvanian*, Thursday, February 28, 1833, p. 3)

\*". . . When only thirteen years of age he [Coe F. Young] began the performance of the duties of life by driving on the tow-path of the Delaware and Hudson Canal Company, as so many of our successful and prominent men have done. Before he attained his majority he served as a clerk in the store of Thomas W. Cornell & Co., at Eddyville, Ulster County, N. Y., [emphasis added] and subsequently with their successor, Martin J. Merchant." Biographical portrait of Coe F. Young in *Mathews*.

Thomas W. Cornell, who owned the store in Eddyville (later owned by Martin J. Merchant) in which Coe F. Young clerked as a young man, and Peter Cornell, the partner of John B. Gedney in the D&H Canal Transportation Line with a stand opposite the Tide Water Lock in Eddyville must have been related to each other. Two brothers? Father and son?

**1833**

### **ISAAC COCKS (formerly Cocks & Purdy) DELAWARE & HUDSON Canal Transportation Line, for 1833**

Space ad *Northern Pennsylvanian*, Thursday, February 28, 1833, p. 4

**ISAAC COCKS,** / (formerly Cocks & Purdy) / DELAWARE & HUDSON / Canal / Transportation Line, for 1833 / From Eddyville, Sloop HOAXER, Captain ALEXANDER SECOR; Sloop ROBERT NORTH, Capt. JOHN KROWS, will sail from the above dock EVERY THURSDAY, and from the foot of Dey Street, New York, EVERY SATURDAY, throughout the season of Navigation. / The subscriber feels grateful for the encouragement received while in the firm of Cocks and Purdy, and now solicits the favour of his friends and former customers of the firm, on his own account. / The above vessels are in complete order and commanded by experienced Captains, and every attention will be paid to all freight entrusted to his charge. The subscriber will spend most of his time in New York to attend to receiving and disposing of Freight.--Merchants and others freighting by this line may depend on having their goods forwarded with the utmost dispatch. Cash advanced on freight when delivered on the



dock. Office, corner of Washington and Courtland streets, N. Y. / Isaac Cocks. / Eddyville, Jan. 17, 1833 --6m / ISAAC COCKS / Will keep on hand at his store on the dock a good supply of Pork, Fish, Flour, Salt, Tar, Pitch, and Oakum, which he will sell low for Cash, or exchange for Lumber etc, where all freighters bills will be left in the absence of the Sloops. (*Northern Pennsylvanian*, Thursday, February 28, 1833, p. 4)

## 1834

### Goods received in Carbondale:

#### White & Gillespie

“**NEW GOODS.** / **White & Gillespie,** / Have just received from New York, a large and Splendid assortment of / **Fall and Winter / GOODS,** /which in addition to their former stock, comprises as general an assortment, as is usually kept in any country store. They do therefore, invite their friends and the public, to give them a call, as they will sell as cheap as the cheapest. Most kinds of country produce will be received in payment. / Carbondale, Oct.31, 1834 tf” (*Northern Pennsylvanian*, November 14, 1834, p. 4)

1836

**George F. Knapp**

*(Northern Pennsylvanian, Saturday, April 16, 1836, p. 3)*

"FREIGHTING,  
Storage and Forwarding,  
GEORGE F. KNAPP,

Thankful for past favors, informs the public that, having made arrangements with the Freighters, on the Hudson River, and upon the Delaware and Hudson Canal, he is now prepared to make contracts for the transportation of Merchandise, from New York to Carbondale, by the ton or otherwise.

Those who please to favor him with their business may rely upon their goods being forwarded with despatch and delivered into their waggons at Carbondale in good order.

This arrangement will enable those who wish to ascertain the exact cost of transportation from one place to the other, and will also render the settlement of their transportation accounts much less perplexing.

Carbondale, April 16, 1836--4tf

(*Northern Pennsylvanian*, Saturday, April 16, 1836, p. 3); scan of ad given above from *Northern Pennsylvanian*, April 12, 1836, p. 3:

**FREIGHTING,  
Storage and Forwarding.**  
**GEORGE F. KNAPP,**

Thankful for past favors, informs the public, that, having made arrangements with the **Freighters**, on the Hudson River, and upon the Delaware and Hudson Canal, he is now prepared to make contracts for the transportation of Merchandise, from New York to Carbondale, by the ton or otherwise.

Those who please to favour him with their business, may rely upon their goods being forwarded with despatch, and delivered into their waggons at Carbondale in good order.

This arrangement will enable those who wish to ascertain the exact cost of transportation, from one place to the other, and will also render the settlement of their transportation accounts much less perplexing.

Carbondale, April 16, 1836—4tf.



1837


### **Union Transportation Line on the North River**

Space Ad in *Northern Pennsylvanian*, Saturday, March 7, 1837, p. 3, same ad with logo in March 11, 1837 issue

**UNION TRANSPORTATION LINE / ON THE / NORTH RIVER / AND / FROM N. YORK TO HONESDALE, / VIA / KINGSTON AND ELLENVILLE.** / The subscriber begs leave to inform his Friends and the Public, that he is now prepared to transact all Freighting and Commission business with accuracy and despatch, being determined to devote himself entirely to their interest. having purchased the following superior fast sailing **SLOOPS, / ORANGE PACKET / MICHIGAN, CHATHAM**, One of which will leave the New Dock and Store house at Wulbur (late Twaalfskill) every Monday and Thursday, and from foot of Murray Street, New York, every Wednesday and Saturday. / The Steam Boat *Caroline* will run in the same line, leaving Kingston every Monday, Wednesday and Friday, at 6 P.M. New York every Tuesday, Thursday and Saturday, at 5 P.M. / Canal Boats will always be in readiness at the Store House at Wilbur, to receive Freight from the Sloops and Steamboat, for the Canal, and deliver the same to any place between Kingston and Honesdale. Goods will be forwarded to Carbondale and the bills for the freight through from New York to Carbondale, to be paid at Carbondale, where the goods are consigned. / The Subscriber would notice particularly that he has now completed the Largest and most convenient Store House in the County, together with a Large and Commodious Dock, to facilitate the loading & unloading of Canal and other Boats, and every exertion will be made to accommodate & oblige those who may favor him with their business. / *Office in New York, No. 104, Water Street.* / J. Van Valkenburg, / Carbondale, February 1<sup>st</sup>, 1837, tb / (*Northern Pennsylvanian*, Saturday, March 7, 1837, p. 3)

Here is an electronic scan of the above ad (April 8, 1837, p. 4):

**UNION TRANSPORTATION LINE**



**ON THE  
NORTH RIVER  
AND  
Delaware and Hudson Canal,  
FROM N. YORK TO HONESDALE,  
VIA.  
Kingston and Ellenville.**

The subscriber begs leave to inform his Friends and the Public, that he is now prepared to transact all Frighting and Commission business with accuracy and despatch, being determined to devote himself entirely to their interest. Having purchased the following superior fast sailing SLOOPS,

**ORANGE PACKET,  
MICHIGAN, CHATHAM,**

One of which will leave the New Dock and Store House at Wilbur, (late Twaalfskill) every Monday and Thursday, and from foot of Murray Street, New York, every Wednesday and Saturday.

The Steam Boat Caroline will run in the same line leaving Kingston every Monday, Wednesday and Friday, at 6 P. M. New York every Tuesday, Thursday and Saturday, at 5 P. M.

Canal Boats will always be in readiness at the Store House at Wilbur, to receive Freight from the Sloops and Steamboat, for the Canal, and deliver the same to any place between Kingston and Honesdale. Goods will be forwarded to Carbondale and the bills for the freight through from New York to Carbondale, to be paid at Carbondale, where the goods are consigned.

The Subscriber would notice particularly that he has now got completed the Largest and most convenient Store House in the County, together with a Large & Commodious Dock, to facilitate the loading & unloading of Canal and other Boats, and every exertion will be made to accomodate & oblige those who may favor him with their business.

Office in New York, No. 104, Water Street.

**J. Van Valkenburgh,**  
Carbondale, Feb. 1st 1837.—th

1838

## Carbondale Cash Store

Goods received in Carbondale via D&H Canal and Railroad, December 1838:

*The Carbondale Journal*, December 8, 1838. p. 2

**CARBONDALE CASH STORE.**  
**Cheap as the Cheapest.**  
**J. BENJAMIN & Co.** offer for sale a large assortment of Merchandize, cheap for cash or approved credit. Their friends and the public generally are respectfully invited to call and examine for themselves. The following articles form a part of their present stock, which has been selected with care and purchased at the lowest cash prices, viz.

**DRY GOODS:**  
Superfine and common Broadcloths, of various colors; plain, plaid, ribbed and striped Cassimeres; single and double milled Satinets; Domestic Cloths, Buffalo Cloths and Mole Skins; a great variety of silk and other Vestings; red, yellow, green and white Flannels; white and colored Canton Flannels; French & English Merinos; Merino and com. Circassians; black Lasting; Bombazines; goat's hair and Eng. Camblets; crape Camblets; green and crimson Moreen; lamb's wool and cotton Shirts and Drawers; black, scarlet and white Merino Shawls; Thibet wool, Valencia, cassimere and cotton Shawls; a great variety of Dress Handkerchiefs; an extensive assortment of black and light colored plain and fig'd Silks for ladies' dresses and bonnets; gauze and Taffeta Ribbons; embossed and plain Cambric Muslins; plain and figured Jaconett Cambric; Swiss and Book Muslins; Bishop Lawn, check and lace Cambric; an extensive assortment of French, English & American Prints; Furniture Calico; plaid, striped and plain Gingham; silk and tabby Velvet; bro. and bleached Drilling; Apron Check; Bed Tick; linen and cotton Diaper; Table Covers; Silecia; Shirting; brown Linen; bleached and brown cotton Sheeting and Shirting; black and plaid silk and cotton Cravats; silk and cotton flagg and bandanna Hdkfs.; ladies and gentlemen's silk and leather Gloves; silk, cotton, worsted and lamb's wool Hose; rich Belt Ribbons; bobinett and quill Lace; Gauze Veils; French Capes, &c.

**ALSO,**  
**Groceries, Crockery, Hardware,**  
**Stone Ware, Glass and China Ware,**  
**Boots and Shoes, School Books,**  
Together with many other articles, too numerous to mention.

Dec. 8. 1838.



1839

**Goods for sale from New York in Carbondale:**

*The Carbondale Journal*, March 7, 1839, p. 3

**NEW GOODS.**

**G**EORGE F. KNAPP has for sale a general and full assortment of Merchandise adapted to the wants of community, which will be sold low for Cash, Produce, or approved Credit.

Among his assortment may be found

DRY GOODS,	PROVISIONS,
GROCERIES,	SALT & NAILS,
HARDWARE,	IRON & STEEL,
CROCKERY,	DYE STUFFS,
BOOTS & SHOES,	PAINTS & OILS,
HATS & CAPS,	SCHOOL BOOKS,
DRUGS & MEDICINES.	

Carbondale, Dec. 8, 1838.

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**NEW GOODS.**

**L**ATE ARRIVAL.—The subscribers have just received from New York a new supply of well selected *Winter Goods*, which they offer for sale at low prices. The public are invited to call and examine their assortment—which, it is confidently believed, is unsurpassed within the limits of the contemplated New County. The attention of the Ladies is particularly called to their large stock of English and French Merinoes, Shawls, Prints, Ribbons, and Gloves—of which they have a beautiful variety.

H. HACKLEY & SON.

Carbondale, Dec. 20, 1838.

1839

## Cornell, Bidwell & Co.'s Steam Freight Line

*The Carbondale Journal*, February 21, 1839, p. 3

**Cornell, Bidwell & Co.'s**  
**STEAM FREIGHT LINE.**—The subscribers would respectfully inform their friends and the public that they have made the following arrangements  
**FOR 1839.**

*Towboat SARATOGA*, Capt. F. Frisbee, (Goods insured,) will leave Rondout on Mondays at 3 P. M. and New York (from the foot of Murray street) on Fridays at 5 P. M.

*Steamboat GENERAL JACKSON*, Capt. D. P. Mapes, will leave Rondout every Tuesday and Friday at 3 P. M. and New York (foot of Murray street) every Wednesday and Saturday at 5 P. M.

*Steamboat VICTORY*, Capt. J. P. Dean, will leave Rondout every Monday and Thursday at 3 P. M. and New York every Tuesday and Friday at 5 P. M.

In connection with the above the subscribers will have new Covered Canal Boats to meet the Barge, for the transportation of Merchandize and Lumber to and from the different places on the Delaware and Hudson Canal.

Lumber will be received in Yard to sell on Commission, and Storage furnished for Merchandize and Produce in New-York. Storage furnished at Rondout, and Goods shipped to any Port by vessels sailing from that place.

The subscribers are grateful for past favors, and hope by strict attention to business to merit a continuance of the same.

All freight and orders gratefully received and punctually attended to by THOMAS CORNELL, at Rondout, JACOB B. BIDWELL, New York, and FRANKLIN FRISBEE, on board the Tow Boat.

All Boats to and from our Landing will be Towed to and from Eddyville *FREE*, and have the preference.

Office in New York, 101 West Street, corner of Murray Street.

**CORNELL, BIDWELL & Co.**  
February 1, 1839.

## **Cornell, Bidwell & Co.'s Steam Freight Line**

"Cornell, Bidwell & Co.'s

Steam Freight Line.--The Subscribers would respectfully inform their friends and the public that they have made the following arrangements

### **FOR 1839.**

*Towboat* SARATOGA, Capt. F. Frisbee, (Goods insured,) will leave Rondout on Mondays at 3 P. M. and New York (from the foot of Murray street) on Fridays at 5 P.M.

*Steamboat* GENERAL JACKSON, Capt. D. P. Mapes, will leave Rondout every Tuesday and Friday at 3 P.M. and New York (foot of Murray street) every Wednesday and Saturday at 5 P.M.

*Steamboat* VICTORY, Capt. J. P. Dean, will leave Rondout every Monday and Thursday at 3 P. M. and New York every Tuesday and Friday at 5 P. M.

In connection with the above the subscribers will have new Covered Canal Boats to meet the Barge, for the transportation of Merchandize and Lumber to and from the different places on the Delaware and Hudson Canal.

Lumber will be received in Yard to see on Commission, and Storage furnished for Merchandize and Produce in New York. Storage furnished at Rondout, and Goods shipped to any Port by vessels sailing from that place.

The subscribers are grateful for past favors, and hope by strict attention to business to merit a continuance of the same.

All freight and orders gratefully received and punctually attended to by THOMAS CORNELL\*, at Rondout, JACOB B. BIDWELL, New York, and FRANKLIN FRISBEE, on board the Tow Boat.

All boats to and from our Landing will be Towed to and from Eddyville FREE, and have the preferences.

Office in New York, 101 West Street, corner of Murray Street.

CORNELL, BIDWELL & CO..

February 1, 1839." (Ad in *The Carbondale Journal*, March 14, 1839, p. 4)

\* Thomas Cornell from Rondout: This is perhaps the Thomas W. Cornell (or perhaps his son) who owned the store in Eddyville (see above, under Freight Lines) in which Coe F. Young clerked as a young man.



1840

## Cornell & Bidwell's Steam Freight Line

*Carbondale Journal*, June 11, 1840, p. 3

### **CORNELL & BIDWELL'S Steam Freight Line.**

**T**HE subscribers would respectfully inform their friends and the public that they have made the following arrangements for 1840.

*Towboat **Saratoga***, Capt. F. FRISBEE, (goods insured) will leave Rondout on Mondays at 3 P. M., and New York (from the foot of Murray street) on Fridays at 5 P. M.

*Steamboat **Gen. Jackson***, Capt. D. P. MAPES, will leave Rondout every Tuesday and Friday at 3 P. M. and New York, (foot of Murray street) every Wednesday and Saturday, at 5 P. M.

*Steamboat **Victory***, Capt. J. P. DEAN, will leave Rondout every Monday and Thursday, at 3 P. M. and New York every Tuesday and Friday at 5 P. M.

In connection with the above, the subscribers will have new Covered Canal Boats, to meet the barge, for the transportation of Merchandize and Lumber to and from the different places on the Delaware and Hudson Canal.

Lumber will be received in Yard to sell on Commission, and Storage furnished at Rondout, and Goods shipped to any Port by vessels sailing from that place.

The subscribers are grateful for past favors, and hope by a strict attention to business to merit a continuance of the same.

All freight and orders gratefully received and punctually attended to by THOMAS CORNELL, at Rondout, JACOB B. BIDWELL, New York, and FRANKLIN FRISBEE, on board the Tow Boat.

All Boats to and from our landing, will be towed to and from Eddyville, FREE, and have the preference.

Office in New York, 101 West Street, corner of Murray Street.

**CORNELL & BIDWELL.**

February 20, 1840.

631f

1841

## Cornell & Bidwell's Steam Freight Line

*Carbondale Journal*, January 7, 1841, p. 4:

**C O R N E L L & B I D W E L L ' S**  
**Steam Freight Line.**

**T**HE subscribers would respectfully inform their friends and the public that they have made the following arrangements for 1840.

Towboat **Suato g a**, Capt. F. FRISBEE, (goods insured) will leave Rondout on Mondays at 3 P. M., and New York (from the foot of Murray street) on Fridays at 5 P. M.

Steamboat **Gen. Jackson**, Capt. D. P. MAPES, will leave Rondout every Tuesday and Friday at 3 P. M. and New York, (foot of Murray street) every Wednesday and Saturday, at 5 P. M.

Steamboat **Victory**, Capt. J. P. DEAN, will leave Rondout every Monday and Thursday, at 3 P. M. and New York every Tuesday and Friday at 5 P. M.

In connection with the above, the subscribers will have new Covered Canal Boats, to meet the barge, for the transportation of Merchandize and Lumber to and from the different places on the Delaware and Hudson Canal.

Lumber will be received in Yard to sell on Commission, and Storage furnished at Rondout, and Goods shipped to any Port by vessels sailing from that place.

The subscribers are grateful for past favors, and hope by a strict attention to business to merit a continuance of the same.

All freight and orders gratefully received and punctually attended to by THOMAS CORNELL, at Rondout, JACOB B. BIDWELL, New York, and FRANKLIN FRISBEE, on board the Tow Boat.

All Boats to and from our landing, will be towed to and from Eddyville, FREE, and have the preference.

Office in New York, 101 West Street, corner of Murray Street.

**CORNELL & BIDWELL.**  
February 20, 1840. 63tf

## Cornell & Bidwell's Steam Freight Line

*Carbondale Journal*, August 19, 1841, p. 1:


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### **C O R N E L L & B I D W E L L ' S** **Steam Freighting Line.**

**T**HE subscribers would respectfully inform their friends and the public that they have made the following arrangements for **1841**.

The Steamboat **Victory**, Capt. D. P. MAPES, leaves Rondout every *Tuesday* (with a Barge) and *Friday*, at 2 o'clock P. M., and New-York every Wednesday and Saturday, (with a Barge) at 5 P. M.

The Steamboat **Emerald**, Capt. JOHN KETCHAM, leaves Rondout every Wednesday and Saturday, at 3 o'clock P. M., and New-York every Monday and Thursday, at 5 o'clock P. M.

 In connection with the above line, *two Sloops* will be run by the subscribers, for the transportation of Merchandize and Freight, to and from the different Landings on the River, between Rondout and New-York.

In connection with the above, the subscribers will have new Covered Canal Boats to meet the Barge, for the transportation of Merchandize and Lumber to and from the different places on the Delaware and Hudson Canal.

Lumber will be received in Yard to sell on Commission, and Storage furnished for Merchandize and Produce in New-York. Storage furnished at Rondout, and Goods shipped to any Port by vessels sailing from that place.

All freight and orders gratefully received and punctually attended to by THOMAS CORNELL, at Rondout, and JACOB B. BIDWELL, at New-York. Office in New-York, 101 West Street, corner of Murray Street.

CORNELL & BIDWELL.

Rondout, January 22, 1841.

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Electronic copy of preceding ad:

## Cornell & Bidwell's Steam Freight Line


*Carbondale Journal*, February 25, 1841, p. 3

**C O R N E L L & B I D W E L L ' S**  
**Steam Freighting Line.**

**T**HE subscribers would respectfully inform their friends and the public that they have made the following arrangements for **1841.**

The Steamboat **Victory**, Capt. D. P. MAPES, leaves Rondout every *Tuesday* (with a Barge) and *Friday*, at 2 o'clock P. M., and New-York every *Wednesday* and *Saturday*, (with a Barge) at 5 P. M.

The Steamboat **Emerald**, Capt. JOHN KETCHAM, leaves Rondout every *Wednesday* and *Saturday*, at 3 o'clock P. M., and New-York every *Monday* and *Thursday*, at 5 o'clock P. M.

 In connection with the above line, *two Sloops* will be run by the subscribers, for the transportation of Merchandize and Freight, to and from the different Landings on the River, between Rondout and New-York.

In connection with the above, the subscribers will have new Covered Canal Boats to meet the Barge, for the transportation of Merchandize and Lumber to and from the different places on the Delaware and Hudson Canal.

Lumber will be received in Yard to sell on Commission, and Storage furnished for Merchandize and Produce in New-York. Storage furnished at Rondout, and Goods shipped to any Port by vessels sailing from that place.

All freight and orders gratefully received and punctually attended to by THOMAS CORNELL, at Rondout, and JACOB B. BIDWELL, at New-York. Office in New-York, 101 West Street, corner of Murray Street. CORNELL & BIDWELL.

Rondout, January 22, 1841.

1841

**Geo. P. Monell**

Goods received in Carbondale from New York City:

*Carbondale Journal*, April 1, 1841, p. 3”



**NEW ARRIVAL !**  
**J**UST RECEIVED direct from New-York city,  
a few pieces of very rich English calicoes of the  
latest and most fashionable patterns. Call and see  
them before they are all gone, as they are selling very  
fast.  
GEO. P. MONELL.  
March 31, 1841.

*Carbondale Journal*, May 13, 1841, p. 3:



**Arrived at last !!**  
**Four weeks later from New York !**  
**R**ECEIVED this day, \$5,000 worth of the nicest  
Goods ever offered in Carbondale. Those wish-  
ing to buy Goods cheap, can do so by calling at  
May 13, 1841. GEO. P. MONELL'S.

**1858**

**T. Cornell & Co.**

See advertisement in *The Advance*, April 24, 1858, p. 2

"The Delaware and Hudson Canal will open on Tuesday, the 4<sup>th</sup> of May. The cars, we understand, will commence running on the 3d. See advertisement of T. Cornell & Co., who will then be prepared to receive freight for Carbondale, and all points in our valley between this and Wilkesbarre." (*The Advance*, April 24, 1858, p. 2)

In the spring of 1852, Coe F. Young bought of Major Cornell a half interest in the canal freight line between New York and Northeastern Pennsylvania. That we know from the biographical portrait of Coe F. Young given above.

At that time, 1852, the firm of Thomas Cornell & Co. was organized. In 1857, Coe F. Young moved to Honesdale. In 1862, he became the sole proprietor of the firm of Thomas Cornell & Co., which he operated alone for seven years (until 1864). The line was then sold to the D&H (see below).



1859

Coe F. Young's (Successor to T. CORNELL & CO.) Delaware & Hudson Canal Line

*Carbondale Advance*, April 23, 1859, p. 3:

**COE F. YOUNG'S**  
(Successor to T. CORNELL & CO.)  
**DELAWARE & HUDSON CANAL**  
**LINE.**

1859.      **ARRANGEMENTS.**      1859.

**T**HE undersigned, Commission Merchant and Proprietor of the above Line, would respectfully announce to the Public, that on and after Thursday, the 21st day of April, he will receive Freight at the

**Pier, Foot of Jay St., New York,**

For Honesdale,	Carbondale,	Archbald,
Providence,	Hawley,	Blakely,
Dunmore,	Scranton,	Pittston,
Port Griffith,	Wilkesbarre,	

and intermediate places. They will run a daily line of **DECK CANAL BOATS**, for the transportation of Merchandise direct to and from New York, Hawley and Honesdale, *without transshipment.*

This line of boats will be towed from New York by a **DAILY LINE of STEAMBOATS** by which arrangement

**Great Dispatch**

can be given in forwarding Freight to the various points of destination on the route.

Arrangements have been made with the Pennsylvania Coal Company, by which the Proprietor of this Line will run all Freight over their Railroad, from Hawley to Pittston, Port Griffith and intermediate Stations, that may come to his charge for that purpose.

**IRA DANIELS**, Agent at Hawley.

☞ Merchandise will be received daily in New York, at the Pier, Foot of Jay St., until 5 o'clock, P. M., after which hour no receipt will be given, nor Freight taken. All small parcels, also Codfish, and other articles of the like sort, must be properly boxed, and all goods clearly and distinctly marked, or they will not be received. All Goods required to be kept dry, will not be received in the Rain. All Claims for *Damage* must be made within *Fifteen Days* after the delivery of the Goods. All Freight will be subject to payment on delivery.

**T. CORNELL**, Agent, Rondout.  
**D. HORTON**, Agent, New York,  
Office 47 Jay St., and on the Dock, Foot of Jay St.

**C. F. YOUNG**, Honesdale, Pa.

N. B.—The Proprietor of this Line will not hold himself liable for the destruction of Freight by Fire after delivery in his respective Warehouses, nor for the Leakage of Casks, Breakage of Looking Glasses, or Glassware, (unless the packages are injured by handling, while in his charge.)

April 16, 1859.      6m\*

1861

## The Hope Express Company

*Carbondale Advance*, June 22, 1861, p. 4:

### THE HOPE EXPRESS COMPANY

FORWARD MERCHANDISE AND MONEY, COL-  
LECT WITH GOODS, AND NOTES AND  
DRAFTS.

*On the Line of the Central Railroad of New Jersey,  
Lehigh Valley Railroad, Delaware, Lacka-  
wanna & Western R. R., Lackawanna  
& Bloomsburg R. R.*

RUNNING DAILY, SUNDAYS EXCEPTED, TO  
AND FROM CARBONDALE.

**E**ACH Express in charge of a Special Messenger, to

ELIZABETH,  
PLAINFIELD,  
BOUND BROOK,  
SONERVILLE,  
FLEMINGTON,  
WHITE HOUSE,  
NEW GERMANTOWN,  
OLINTON,  
NEW HAMPTON,  
DELVIDERE, &c.,  
(In New Jersey.)

EASTON,  
BETHLEHEM,  
ALLENTOWN,  
MAUCH CHUNK,  
STROUDSBURG,  
SCRANTON,  
PITSTON,  
WILKES-BARRE,  
MONTROSE,  
AND GREAT BEND,  
(In Pennsylvania.)

And all intermediate stations. And connecting at that  
point with the New York and Erie Railroad for the far  
West. Connecting at New York with Expresses to all  
parts of the world.

Office in Carbondale, at JADWIN'S new Drug  
and Bookstore, Main Street.

O. H. JADWIN, *Agent*.

Nov. 14, 1856.

40

1863

## The Hope Express Company

*Carbondale Advance*, June 6, 1863, p. 4

**THE HOPE**  
**EXPRESS COMPANY**  
FORWARD MERCHANDISE AND MONEY, COLLECT WITH GOODS, AND NOTES AND DRAFTS.  
*On the Line of the Central Railroad of New Jersey, Lehigh Valley Railroad, Delaware, Lackawanna & Western R. R., Lackawanna & Bloomsburg R. R.*  
RUNNING DAILY, SUNDAYS EXCEPTED, TO AND FROM CARBONDALE.  
**E**ACH Express in charge of a Special Messenger, to  
ELIZABETH, PLAINFIELD, BOUND BROOK, SOMERVILLE, FLEMINGTON, WHITE HOUSE, NEW GERMANTOWN, CLINTON, NEW HAMPTON, BELVIDERE, &c.,  
(In New Jersey.)  
EASTON, BETHLEHEM, ALLENTOWN, MAUCH CHUNK, STROUDSBURG, SCRANTON, PITSTON, WILKES-BARRE, MONTROSE, AND GREAT BEND,  
(In Pennsylvania.)  
And all intermediate stations. And connecting at that point with the New York and Erie Railroad for the far West. Connecting at New York with Expresses to all parts of the world.  
Office in Carbondale, at JADWIN'S new Drug and Bookstore, Main Street.  
O. H. JADWIN, Agent.  
Nov. 14, 1856



1864

**"Mr. Young's Freight Line" (formerly the firm of Thomas Cornell & Co.) purchased by the D&H in 1864**

"We find the following item in the *Honesdale Democrat* of this week: / The Delaware and Hudson Canal Company have bought Mr. Young's freight line, and will hereafter run it on their own account. They have also bought his lots of land contiguous to the lateral basin in this borough." (*Carbondale Advance*, January 23, 1864, p. 2)

**D&H Freight Line**

**"NAVIGATION OPENED.**—The water has been let into the Del. & Hud. Canal, and the work of loading boats will commence to-morrow, the 22<sup>nd</sup> inst. The Del. & Hud. Freight Line commenced receiving freight on their boats at New York yesterday. Navigation will not be fairly resumed before the first of next week.—*Wayne County Herald*." (*Carbondale Advance*, April 23, 1864, p. 2)

On January 1, 1864, Coe F. Young was named Superintendent of the D&H Canal. It is understandable, therefore, that he would sell his D&H Canal freight line at that time.

From *Mathews'* biographical portrait of Coe F. Young:

"When only thirteen years of age [1837] he began the performance of the duties of life by driving on the tow-path of the Delaware and Hudson Canal Company, as so many of our successful and prominent men have done. Before he attained his majority he served as a clerk in the store of Thomas W. Cornell & Co., at Eddyville, Ulster County, N. Y., and subsequently with their successor, Martin J. Merchant. Soon afterward, the Delaware and Hudson Canal Company began enlarging the canal, and the construction of the Erie Railway was undertaken. With the ambition of youth, and the energy and business sagacity that has since characterized his life, he resolved to profit by the opening trade and removed to Barryville, N. Y., where, in connection with Calvin P. Fuller, he established a store, the firm doing business under the name and style of Fuller & Young. In the spring of 1852 he bought of Major Cornell a half-interest in the canal freight line between New York and Northeastern Pennsylvania. The firm of Thomas Cornell & Co. was organized, and [in 1857] Mr. Young removed to Honesdale, Pa., where he has since resided. After five years [1862], he became, by purchase the sole proprietor of the line, and operated it alone for seven years longer [until 1864, see below]."

1864

**The Hope Express Company**

O. H. Jadwin, Agent, in Carbondale

Space ad *Carbondale Advance*, May 28, 1864, p. 4:

**THE HOPE  
EXPRESS COMPANY**  
FORWARD MERCHANDISE AND MONEY, COL-  
LECT WITH GOODS, AND NOTES AND  
DRAFTS.  
*On the Line of the Central Railroad of New Jersey,  
Lehigh Valley Railroad, Delaware, Lacka-  
wanna & Western R. R., Lackawanna  
& Bloomsburg R. R.*  
RUNNING DAILY, SUNDAYS EXCEPTED, TO  
AND FROM CARBONDALE.  
**E**ACH Express in charge of a Special Messenger, to  
ELIZABETH, EASTON,  
PLAINFIELD, BETHLEHEM,  
BOUND BROOK, ALLENTOWN,  
SOMERVILLE, MAUCH CHUNK,  
FLEMINGTON, STROUDSBURG,  
WHITE HOUSE, SCRANTON,  
NEW GERMANTOWN, PITTSBURGH,  
CLINTON, WILKES-BARRE,  
NEW HAMPTON, MONTROSE,  
BELVIDERE, &c., AND GREAT BEND,  
(In New Jersey.) (In Pennsylvania.)  
And all intermediate stations. And connecting at that  
point with the New York and Erie Railroad for the far  
West. Connecting at New York with Expresses to all  
parts of the world.  
Office in Carbondale, at JADWIN'S new Drug  
and Bookstore, Main Street.  
O. H. JADWIN, Agent.  
Nov. 14, 1856

The Hope Express Company office in Carbondale was at Jadwin's new Drug and Bookstore, Main Street, Carbondale. Here is the Jadwin ad from the *Carbondale Advance*, May 28, 1864, p. 4:



**ORLANDO H. JADWIN,**  
Wholesale and Retail  
**DRUGGIST AND BOOKSELLER,**  
**MAIN STREET,**  
*(South of the Public Square.)*

**T**HE subscriber is daily adding to his assortment  
Goods all such articles as are desirable, and would  
respectfully call your attention to the largest and best  
stock of



**Drugs, Chemicals, Paints,**  
**Oils, Varnishes, Glues,**  
**Dye-Stuffs, Glass, Putty, &c.,**  
*Gilt Mouldings for Picture Frames,*  
*Burning Fluid, Alcohol, &c.,*  
With a general variety of

**Perfumery and Toilet Articles,**

*YANKEE NOTIONS, &c.,*  
**FRUIT & CONFECTIONERY**  
ALL OF THE POPULAR  
**PATENT MEDICINES!**  
OF THE DAY.

**SHOULDER BRACES, Supporters and Trusses.**

**Kerosene and Kerosene Lamps,**  
exceedingly low. Also our wonderful POTASH, tha  
disappoints no purchaser.

**BOOKS AND STATIONERY, &C**  
*Sunday-School Books, &c.*

ALL KINDS OF  
**SCHOOL BOOKS!**

sold very cheap. Being Agent for Hope Express Com-  
pany, we are able to procure any Book or Books out  
of our line, such as BLANK BOOKS with Printed  
Heads, NEW BOOKS as soon as issued, &c. Also  
Agent for the New *American Encyclopedia*.

Our long experience in the business gives us the ad-  
vantage of a thorough knowledge of the trade. Thank-  
ful for the liberal patronage already bestowed, we hope  
by strict attention to business, a careful selection of  
Drugs at fair prices, and the desire to please all, to  
merit a continuance of the favors of a discriminating  
public.

O. H. JADWIN.

Carbondale, October 20, 1860.

21

Space ad *Carbondale Advance*, May 28, 1864, p. 4:

1887

In early November 1887, it was announced in the public press that “During the past few months both freight and passenger traffic has about doubly increased on the Pennsylvania Division of the D. & H. Road, which is an indication that the road is becoming popular.” Here is that announcement that was published in the Carbondale Leader:

**"The D. & H. Road.** / During the past few months both freight and passenger traffic has about doubly increased on the Pennsylvania Division of the D. & H. Road, which is an indication that the road is becoming popular. This can alone be attributed to good management, as long as such wide awake men as General Passenger Agent Burdick, District Passenger and Freight Agent Wheeler and Superintendent Manville are at the helm. The road was never in better shape and additional improvements are being constantly added. The passenger trains make close connections with all roads, and aside from that, the road is one of the safest in the country. The D. & H. Gravity Road, extending from Carbondale to Honesdale, is being liberally patronized, and the ride, at this time of year, is certainly an invigorating one. This road is open the whole year round—*Wilkes-Barre Newsdealer*." (*Carbondale Leader*, November 15, 1887, p. 4)

## 11. Tariff of Tolls: D&H Canal

### 1828

On June 24, 1828, the D&H established the following "Tariff of Tolls" for freight on the Canal. From this very interesting tariff sheet, we learn that that not only boats but also rafts were moved through the Canal. This **Tariff of Tolls (Corrected)**, June 24, 1828, that is given below, was published in the *Dundaff Republican* of September 25, 1828, p. 3; October 9, 1828, p. 3; also October 16, 1828, p. 1; also October 23, 1828, p. 1; also October 30, 1828, p. 1.





## TARIFF OF TOLLS.

(CORRECTED.)

Established by the Board of Managers of the  
DELAWARE AND HUDSON CANAL COMPANY.

Cents.

Salt and Gypsum. per ton, per mile,	1 1-2
Flour, Meal, Grain, Salted Provisions, Pot & Pearl Ashes, per ton, per mile,	2
Tanners Bark, do. do.	2
Molasses, Sugar, Liquors & Iron,	3
Hay, in bundles pressed, do. do.	1
Merchandize, do. do.	3
Timber, in boats—Hem- lock, per 100 cubic feet	1
Do. Pine,	1 1-2



Do. Oak,	2
Do. Maple, Cherry and Whitewood,	2
Do. in Rafts—Hemlock,	2
Do. Pine,	3
Do. Maple, Cherry and Whitewood,	4
Do. Oak in Rafts,	4
Boards, Plank, or Scantling, per 1000 feet measure, in Boats per mile,	
Hemlock,	1
Pine,	1 1-2
Maple, Cherry and White- wood,	2
In Rafts—Hemlock,	2
Pine,	3
Oak,	4
Maple, Cherry and White- wood,	2 1-2
Manufactures, of Wood, per ton, per mile,	2 1 2
Shingles in boats, per 1000 per mile,	5 mills.
Shingles in Rafts,	8 mills.
Staves, and Heading, per ton, per mile, in boats	1
Staves and Heading, in rafts	2
Iron Castings, per ton, per mile,	3

Iron Castings, per ton, per mile,	3	
Brick, Sand, Lime, Iron ore and stone,	1	
Marble and Mill Stones,	3	
Posts and Rails, per 1000, in boats,	1	
Same in Rafts,	2	
Cord Wood, per Cord, in boats, transported 10 miles and under, per mile,	2	
Above 10 miles and not over 20 miles, provided that the amount of toll shall not be less than 20 cents per cord, for any distance over 10 miles	1	1.2
Above 20 and not over 30 miles, 30 cents per cord,		
Above 30 miles,	1	
Hoop Poles and Split Lath per ton, per mile,	1	
Cotton, in bales or bags,	3	
Articles, not enumerated, going from tide water,	3	
Ditto, toward tide water	2	
Pleasure boats, on the capacity of the boat,	4	
Milage on boats going from Tide water, per mile,	4	
Mileage on boats going towards Tide water, per mile	2	



The foregoing rates are applicable to Boats of the dimensions and form of the boat called the Pattern Boat, built at Deerpark, with such variations only as shall be allowed by the Board of Managers—All others varying either in dimensions or form, shall pay full legal rates—excepting Boats carrying Lumber down and not returning; such may have sharp or rounded heads and sterns and may be of such form in other respects as may suit the convenience of the owners—provided that the length and breadth be conformable to the Pattern Boat—70 feet long and 8 1-2 feet wide.

At different points on the canal and especially at the terminations, the agents of the company shall examine the cargoes of boats to ascertain the correctness of the description of the articles on board.



And in cases where it shall be found that articles chargeable with a higher rate of toll have been covered or concealed by those of a lower rate, then the full legal tolls are to be charged on the whole cargo, and the party using such deception, shall also be prosecuted.

The foregoing rates shall be charged upon condition that the conductors of boats shall in all respects conform to the rules and regulations for the government of those who navigate the canal. All violations shall subject the Boats and Cargoes to full legal tolls, and the violators to prosecution.

Extract from the minutes of the  
Delaware and Hudson Canal Com-  
pany.

*S. Flenwelling*, Treasurer.  
June 24, 1828.

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October 1830

**D&H Table of Tolls & Transportation**

*Dundaff Republican, and Canal & Rail Road Intelligencer, October 6, 1830, p. 1*

**Delaware & Hudson Canal Company's Rail Road.**

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The board of managers of the D. & H. Canal Co. have not yet had that ample experience of the operations of their rail road which would enable them to settle definitely the charges of toll and transportation. Enough however is known to show that there must be many allowances for contingencies in a work of such varied operations, and requiring combinations that call into action the best talents of the civil engineer. But as superficial observers cannot properly appreciate these matters, and a further delay in forming a tariff of tolls and transportation might be misconstrued, and consequently subject the board to the imputations of motives derogatory to their character, they have determined on a tariff as an experiment until by a longer experience they may more accurately ascertain the terms on which they can allow the use of their work to the public. Having due regard to the reasonable expectations of the public on the one hand, and to the outlay of capital, the durability of the work, and the ascertained and contingent expenses upon it.

The rates of toll and transportation in the following table No. 1, is to be considered applicable only to those who shall sign an agreement binding them to conform to the regulations which the character of the work requires for its preservation and uninterrupted use. A non-compliance with, or violation of these regulations will subject the offending party to the rates of tolls in table No. 2, or to prosecution, as the case may require.

By order of the Board,  
JOHN BOLTON, *Pres'd.*

# Table of Tolls & Transportation

*On the rail road of the Delaware and Hudson Canal Company.*

EXPLANATION OF THE TABLE.	TABLE No. 1.									No. 2.			
	RATES OF TOLL.									RATES OF TOLL.			
	For each steam engine plane	For each gravitating engine plane	per mile of road.	Total from Honesdale to Carbondale	By wagons belonging to the Del. & Hud. Canal Co.	By wagons belonging to the owners of freight	By wagons belonging to the Del. and Hud. Canal Company.	By wagons belonging to the owners of freight.		For each steam engine plane	For each gravitating engine plane	Per mile of road	Total from Honesdale to Carbondale
	c'ts	c'ts	c'ts	\$	\$	\$	\$	\$		c'ts	c'ts	c'ts	\$
per ton													
1 Salt, gypsum, lime, iron ore, sand and stone	3	2	1	37	28	20	75	65		4½	3	11-2	551-2
2 Flour, meal, grain, salted provisions, pot and pearl ashes	5	2	11-2	55	40	30	95	85		7½	3	2¼	821-2
3 Merchandize, including sugar, molasses, liquors, iron, iron castings, and cotton, in bales or bags	5	3	2	66	46	35	1 11	1 01		7½	41-2	3	99
Boards, plank, scantling, and other lumber of suitable dimensions for transportation on rail road waggon, per 1000 feet, inch measure, as follows. (to wit)													
Pine and hemlock, unseasoned	6	4	2	74	75	60	1 49	1 34		9	0	5	1 11
do do seasoned	5	4	2	69	60	45	1 29	1 14		7½	6	3	1 03½
All kinds of hard lumber unseasoned	9	6	21-2	1 03	1 00	80	2 03	1 83		13½	9	3½	1 54½
do do seasoned	7	5	2	82	90	75	1 72	1 57		10½	71-2	3	1 23
Shingles of 18 inches length, per 1000	1	1-2	1-2	14½	6	5	20½	19½		1½	3-4	3-4	21½
Anthracite coal, per ton	4	3	2	61		35		96		6	41-2	3	90½
On waggon used principally for carrying passengers	20	15	30	6 25						30	29½	4	9 37½
Articles not enumerated per ton	4	3	2	61	40	30	1 01	91		6	41-2	3	91½

Sept. 20th 1830.

32-2m



## February 1831

Two public statements in February 1831 from the D&H Board of Directors on tolls on the D&H Canal and Railroad:

**“DELAWARE & HUDSON CANAL COMPANY.** / New York, January 18, 1831. / At a meeting of the Board this day, it was Resolved, that the total amount of Tolls on Lumber transported in Boats on the Delaware & Hudson Canal, shall be limited as follows: / 1<sup>st</sup>. On Hemlock Plank, Boards and Scantling, one Dollar per thousand feet, Inch measure. / 2<sup>nd</sup>. Pine Plank, Boards and Scantling, one Dollar fifty cents per thousand feet, Inch measure. / 3d. Maple, Cherry and White Wood, Plank and Boards, two Dollars per thousand feet, Inch measure. / 4<sup>th</sup>. Shingles of 18 to 20 inches in length 32 cents per thousand. / JOHN BOLTON, Pres’t. / Feb. 7, 1831.—1m.” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, February 9, 1831, p. 3; notice repeated in February 16, 1831 issue on page 3)

“At a meeting of the President, Managers and Company of The DELAWARE & HUDSON CANAL COMPANY, January 26, 1831./ The Board being persuaded that the true and permanent interest of the Company will be best promoted by encouraging individual enterprise, It is therefore:-- / RESOLVED, That the Toll on Coal upon the Rail Road, be reduced to 50 cents per ton, subject to all the regulations and provisions, adopted with the Tariff, on the 8<sup>th</sup> of September, 1830. / And that the total amount of toll on Coal transported on the Canal shall not exceed \$1.50 per ton. / Extract from the minutes. / S. FLEWELLING, Treasurer. / Honesdale, Feb. 16 1831.—1m.” (*Dundaff Republican, and Canal & Rail Road Intelligencer*, February 16, 1831, p. 3)



1832

## Table of the Rates of Toll on the Delaware and Hudson Canal

Notice in January 27, 1832 issue of *Dundaff Republican*, and *Canal & Rail Road Intelligencer*, p. 3:  
*Table of the Rates of Toll on the Delaware and Hudson Canal.*

Same notice  
also in:

*Dundaff  
Republican, and  
Canal & Rail  
Road  
Intelligencer*,  
March 4, 1830,  
p. 3; March 18,  
1830, p. 3; May  
19, 1830, p. 3;  
January 17,  
1832, p. 3;  
February 4,  
1832, p. 3

Table of the Rates of Toll on the Delaware and Hudson Canal.		
The first column shews the Rates, where the Rules and Regulations are complied with: the second the legal Tolls.		
ARTICLES,	cts.	cts.
Gypsum, per ton, per mile,	1 1/2	4
Salt,	2 1/2	4
Flour, meal, grain, salted provisions, pot and pearl ashes,	2	4
Cement,	3 1/2	4
Ground tanner's bark,	2	4
Unground do do	1 1/2	4
Molasses, sugars, and liquors,	3	4
Hay in bundles pressed,	1	4
Merchandize,	3	4
Timber in Boats—Hemlock—per 100 cubic feet per mile,	1	4
but not to exceed 75 cents, for any distance on Canal.		
" Pine—per 100 cubic feet, per mile,	1 1/2	4
but not to exceed \$1 for any distance on Canal.		
" Oak—per 100 cubic feet, per mile,	2	4
but not to exceed \$1.50 for any distance on Canal.		
" Maple, Cherry, & Whitewood, per 100 cubic feet per mile,	3	4
but not to exceed \$3 for any distance on the Canal.		
" in Rafts—Hemlock—per 100 cubic feet per mile.	2	4
" Pine,	3	4

"	Oak,	4	4
"	Maple, Cherry, & Whitewood,	4	4
<i>Boards, Plank, and Scantling in Boats.</i>			
Hemlock,	per 1000 feet board measure, per mile,	1	4
but not to exceed 75 cents on any distance of the Canal.			
Pine,	per 1000 feet board measure, per mile,	1 1/2	4
but not to exceed \$1 for any distance on Canal.			
Oak,	per 1000 feet board measure, per mile,	2	4
but not to exceed \$1 50 for any distance on Canal.			
Maple, Cherry, and Whitewood,	per 1000 feet board measure, per mile,	3	4
but not to exceed \$3 for any distance on Canal.			
<i>Boards, Plank, or Scantling in Rafts.</i>			
Hemlock,	per 1000 feet board measure, per mile,	2	4
Pine,		3	4
Oak,		4	4
Maple Cherry, and Whitewood,		4	4
Staves and Heading in boats,	per ton, per mile,	1 1/2	4
"	in rafts	2	4



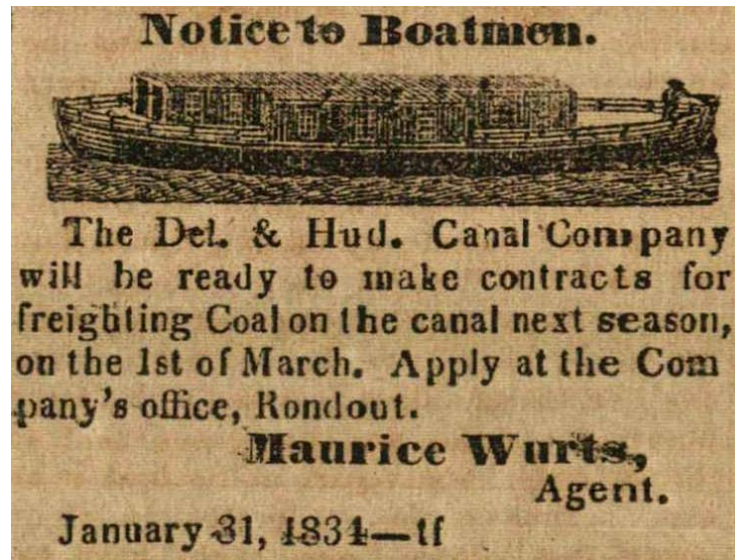
Shingles in boats per 1000 per mile,		
Pine,	4 10	8 100
Hemlock,	3 10	8 10
in rafts, Pine,	3 10	8 10
Hemlock,	8 10	8 10
Manufactures of Wood, per ten per mile,	2 1-2	4
Iron Castings,	3	4
Common brick and Stone Lime, Iron Ore and		
Sand,	1	4
Fire brick, Fire Stone and Coal,	1 1-2	4
Marble and Mill Stones, and all manufactured		
Stone,	3	4
Posts and Rails and Lath in Boats,	1 1-2	4
do do do in Rafts,	3	4
Hoop poles,	1 1-2	4
do do split or shaved,	2	4
Cotton in bales or bags,	3	4
Iron up the Canal,	3	4
do down the Canal,	2	4
Cord wood in boats, from 1 to 10 miles per cord,		
per mile,	4	4
11 miles,	43	44
and for every additional mile one cent per cord, until the toll amounts to 50 cents—and a half cent per cord, per mile, for every additional mile a- bove 18 miles; until the toll amounts to 60 cents per cord, and for every five miles there- after, one cent per cord.		
Articles not enumerated going from tide water,	3	4
Towards tide water,	2	4
Pleasure boats, on the capacity of the boat,	4	4
Milage on boats loaded or empty, towards tide water, two cents per mile—from tide wa- ter, four cents per mile on the boat.		



1834

## Canal Coal Contracts for 1834

*Northern Pennsylvanian*, February 7, 1834, p. 4



## Proposals wanted for freighting coal on the Canal

Ad on page 3 of *Northern Pennsylvanian*, Friday, January 31, 1834:

"Notice to Boatmen. / The Del. & Hudson Canal Company will be ready to make contracts for freighting Coal on the canal next season, on the 1st of March. Apply at the Company's office, Rondout. / Maurice Wurts, Agents" (Same ad, with canal boat logo, in Feb. 7, 1834 issue, p. 4, of *Northern Pennsylvanian*)

1836

## Rates of Toll and Transportation on the Delaware and Hudson Canal Company's Rail Road from Honesdale to Carbondale

*Northern Pennsylvanian*, April 9, 1836, p. 3

<b>RATES.</b>			
<b>OF TOLL AND TRANSPORTATION,</b>			
<b>On the Delaware and Hudson Canal Company's Rail Road,</b>			
<i>From Honesdale to Carbondale.</i>			
For 2000 lbs. of Merchandise, including Sugar, Liquors, Iron, Iron Castings and Cotton in Bales or Bags.			
Distance	Tolls \$ cts.	Trans. \$ cts.	Total. \$ cts.
For 2 miles	6	24	30
4 miles	12	30	42
10 miles	25	53	78
11 miles	27h	56h	84
16 miles	40	72	1 12
For 2000 lbs. of Flour, Meal, Grain, Salted Provisions, Pot and Pearl Ashes.			
Distance	Tolls. \$ cts.	Trans. \$ cts.	Tolls. \$ cts.
For 2 miles	6	24	30
4 miles	10	28	38
10 miles	20	47	67
11 miles	22	50	72
16 miles	32	63	95
For 2000 lbs. of Salt, Lime, Gypsum, Iron Ore, Sand, Stone, Ground Plaster and Cement.			
Distance	Tolls. \$ cts.	Trans. \$ cts.	Total. \$ cts.
For 2 miles	4	21	25
4 miles	8	25	33
10 miles	18	36	54
11 miles	20	40	60
16 miles	28	47	75
All articles not enumerated, to be charged as Merchandise, and all articles must be properly <b>Packed</b> or <b>Secured</b> to prevent their receiving damage by handling, otherwise the company will not hold themselves bound to receive them.			

## Rates of Toll for 1836: *Northern Republican*

<b>RATES</b> <b>OF TOLL AND TRANSPORTATION,</b> <b>On the Delaware and Hudson</b> <b>Canal Company's Rail Road,</b> <i>From Carbondale to Honesdale, for 1836.</i>			
In reference to the carriage of Articles from Carbondale to Honesdale, the Company do not hold themselves bound to furnish waggons for that purpose, unless, by special agreement, in which case the Tolls and Transportation will be as follows;			
For 1000 feet (inch measure) of Seasoned Pine and Hemlock Lumber.			
	Tolls	Trans.	Total.
Distance	\$ cts.	\$ cts.	\$ cts.
For 2 miles	6	15	21
4 miles	8	30	38
10 miles	16	59	75
11 miles	18	62h	80h
16 miles	27h	90	1 17h
For 1000 feet (inch measure) of all kinds of Seasoned Hard Wood Lumber.			
	Tolls.	Trans.	Total
Distance	\$ cts.	\$ cts.	\$ cts.
For 2 miles	8	16	24
4 miles	10	38	48
10 miles	24	80	1 04
11 miles	26	82	1 08
16 miles	37h	1 30h	1 68
If any of the above Lumber is unseasoned, then ten cents per thousand feet (board measure) will be added for the Pine and Hemlock, and twelve and a half cents for the Hard wood, for the whole distance, and in proportion for intermediate distances.			
For 1000 Shingles of 18 inches in length, if put in one bunch.			
	Tolls.	Trans.	Total
Distance	\$ cts.	\$ cts.	\$ cts.
For 2 miles	1	2	3
4 miles	2	4	6
10 miles	4	11	15
11 miles	4h	12	16h
16 miles	5	15	20
Shingles in 3q bunches			24 pr m
do half bunches			28 do
Flour per barrel	3	9h	12h
Oats per bush. in bags	1	2	3
Other grain do do	1h	2h	4
Glass when at the risk of the owner per 2000 lbs	37h	75	1 12h
All other articles not enumerated to be bargained for by the agent of the Company at Carbondale.			



1839

## Notice to Boatmen

*The Carbondale Journal*, March 7, 1839, p. 3

### "NOTICE TO BOATMEN.

The following are the terms of transportation of Coal from Honesdale to Rondout in the year 1839. Running company Boats with an agreement to purchase, by paying \$10 each trip on said boat, and making not less than 16 trips will entitle the Contractor to receive \$1,50 per ton freight. Making less than 16 trips and not less than 14 trips, \$1,45 per ton freight. Making less than 14 trips, \$1,40 per ton freight.

Payments will be made each trip at the rate of \$1.40 per ton, reserving \$10 as a payment on the Boat; and the balance that may be due will be paid at the close of the season.

Individuals running their own Boats, and making not less than two trips per month from the time they commence, will be entitled to \$1,30 per ton freight. Making less than two trips per month, \$1,25 per ton freight.

Payments will be made at the rate of \$1,25 per ton each trip, and the balance that may be due will be paid at the close of the season.

Applications for Boats may be made to J. B. Walton, Esq. Collector at Honesdale, or at the Company's Office at Rondout, and to any of the Superintendents or collectors on the line of the Canal.

R. F. LORD, Engineer,

Office of Del. & Hud. Canal Co., Honesdale, March 2, 1839." (*The Carbondale Journal*, March 7, 1839, p. 3)

Scan of ad given above:

*The Carbondale Journal*, March 7, 1839, p. 3

### **NOTICE TO BOATMEN.**

**T**HE following are the terms of transportation of Coal from Honesdale to Rondout in the year 1839. Running Company Boats with an agreement to purchase, by paying \$10 each trip on said Boat, and making not less than 16 trips will entitle the Contractor to receive \$1,50 per ton freight. Making less than 16 trips and not less than 14 trips, \$1,45 per ton freight. Making less than 14 trips, \$1,40 per ton freight.

Payments will be made each trip at the rate of \$1,40 per ton, reserving \$10 as a payment on the Boat; and the balance that may be due will be paid at the close of the season.

Individuals running their own Boats, and making not less than two trips per month from the time they commence, will be entitled to \$1,30 per ton freight. Making less than two trips per month, \$1,25 per ton freight.

Payments will be made at the rate of \$1,25 per ton each trip, and the balance that may be due will be paid at the close of the season.

Applications for Boats may be made to J. B. Walton, Esq. Collector at Honesdale, or at the Company's Office at Rondout, and to any of the Superintendents or Collectors on the line of the Canal.

**R. F. LORD, Engineer.**

Office of Del. & Hud. Canal Co. Honesdale, March 2, 1839.

1840

## Notice to Boatmen

**“NOTICE TO BOATMEN. / THE DELAWARE & HUDSON / CANAL COMPANY** will pay the following freight for Transporting Coal from Honesdale to Rondout, on their Canal the ensuing season, viz.-- / Running Company’s Boats with an agreement to purchase, and paying \$10 per trip on said boat, and making not less than 16 trips with said boat during the season, \$1.40 per ton freight. / Running Company’s boats with an agreement to purchase, and paying \$10 per trip on said boat and making a trip in 10 days or less time, \$1.40 per ton freight. / Running Company’s boats with an agreement to purchase, and paying \$10 per trip on said boat, and making a trip in 11 days, \$1.35 per ton freight. / Running Company’s boats with an agreement to purchase, and paying \$10 per trip on said boat, and more than 11 days making a trip, \$1.30 per ton freight. / Individuals running their boats in the Coal business will be paid the same freight as Company Boats. / Application for boats can be made to the Collectors and Superintendents on the line of Canal. / R. F. LORD, *Engineer*. / Office of the Delaware & Hudson Canal Company, Honesdale, March 10<sup>th</sup>, 1840.” (*Carbondale Journal*, March 26, 1840, p. 3)



**NOTICE TO BOATMEN.**  
**THE DELAWARE & HUDSON CANAL**  
COMPANY will pay the following freight for Transporting Coal from Honesdale to Rondout on their Canal the ensuing season, viz:—  
Running Company's Boats with an agreement to purchase and paying \$10 per trip on said boat and making not less than 16 trips with said boat during the season, \$1,40 per ton freight.  
Running Company's Boats with an agreement to purchase and paying \$10 per trip on said boat and making a trip in 10 days or less time, 1,40 per ton freight.  
Running Company's Boats with an agreement to purchase and paying \$10 per trip on said boat and making a trip in 11 days, \$1,35 per ton freight.  
Running Company's Boats with an agreement to purchase and paying \$10 each trip on said boat and more than 11 days making a trip, \$1,30 per ton freight.  
Individuals running their boats in the Coal business will be paid the same freight as Company Boats.  
Application for boats can be made to the Collectors and Superintendants on the line of Canal.  
R. F. LORD, *Engineer.*  
Office of Delaware & Hudson Canal Company, )  
Honesdale, March 10th, 1840. )

1840

# Table of The Rates of Toll on the Delaware & Hudson Canal for 1840

Carbondale Journal, March 26, 1840, p. 3

TABLE OF THE RATES OF TOLL ON THE Delaware & Hudson Canal for 1840.		
The first column shows the rates where the Rules and Regulations are complied with—the second, the Legal TOLLS.		
ARTICLES PER TON PER MILE.	CTS.	CTS.
Merchandise, Sugars, Molasses, and Liquors,	3	4
Flour, Meal, Grain, Salted Provisions, Pot & Pearl Ashes,.....	2	4
Gypsum,.....	1½	4
Salt,.....	2½	4
Hay in Bundles, pressed,.....	1	4
Hydraulic Cement going towards tide water on the capacity of boat carrying it,.....	4	4
Do. do. Stone unburnt, on capacity of boat carrying it,.....	4	4
Hydraulic Cement going from tide water,.....	1½	4
Ground Tanner's Bark,.....	2	4
Unground do do,.....	1½	4
Iron Castings,.....	3	4
Iron up the Canal,.....	3	4
Do down the Canal,.....	2	4
Pig Iron up the Canal,.....	4	4
Cotton bales or bags,.....	3	4
Hides (not to exceed \$2 16 for any distance) per ton per mile,.....	2½	4
Common Brick, Stone, Lime, Sand, Potter's Clay, Ashes and Iron ore,.....	1	4
Brick and fire Stone.....	1½	4
Anthracite Coal down the Canal pr. ton pr. mile, 1½		8
Do. do. up the Canal on the capacity of the boat carrying it, per ton per mile,.....	8	8
Charcoal (not to exceed \$1 50 for any distance),.....	2	4
Marble, Mill, and all other Manufactured stones,.....	3	4
Hoop Poles, in boats,.....	1½	4
Fence Posts and Rails, in boats pr. ton pr. mile,.....	1	4
Hoop poles, split or shaved, in boats,.....	2½	4
Lath Split or Sawed, in boats,.....	1	4
Staves and heading, sawed or manufactured in boats,.....	8 9-10	4
Do. do. Rived or split in boats (not to exceed \$1 per ton for any distance) pr. ton pr. mile,.....	1½	4
Staves and heading in rafts,.....	4	4
Hoop Poles, posts, rails and lath in rafts,.....	3	4
Manufactured wood for first 25 miles, (thence 2 1-2 cents, but not to exceed \$1 75 for any distance on the Canal),.....	3	4
Materials for making crates for Glassware, pr ton pr mile,.....	1½	4
TIMBER IN BOATS.		
per 100 c. feet per mile.		
Pine and plain maple, for the first 25 miles, (thence 1 1-2 cents per mile, but not to exceed \$1 for any distance),.....	2	4
Hemlock, for the first 25 miles, (thence 1 ct. not to exceed 75c. for any distance),.....	1½	4
Oak and ash, for first 25 miles, (thence 1 1-2 cent per mile, but not to exceed \$1 50 for any distance),.....	2	4
Ship timber,.....	3½	4
Maple, Cherry, White Wood, and all timber not enumerated (but not to exceed \$2 for any distance),.....	2	4



TIMBER IN RAFTS.		
<i>per 100 c. feet per mile.</i>		
Hemlock,.....	3	4
Pine,.....	3½	4
Ship Timber,.....	4	4
All timber not enumerated,.....	4	4
BOARDS, PLANK OR SCANTLING, IN BOATS.		
<i>per 1000 feet b'd meas, per mile.</i>		
Pine, plain maple and bass wood, for first 25 miles, (thence one cent and a half per mile, but not to exceed \$1 for any distance).....	1½	4
Hemlock for the first 25 miles, (thence 1 cent per mile, but not to exceed 75 cts. for any distance).....	1½	4
Cherry and white wood not to exceed \$1 75 for any distance,.....	2	4
Curled and speck maple, not to exceed \$2 for any distance,.....	2½	4
Ash, oak, and all timber not enumerated, for first 25 miles, thence 1½ cent per mile, not to exceed \$1 25 for any distance,.....	2	4
BOARDS, PLANKS OR SCANTLING RAFTS.		
<i>per 1000 feet b. m. per mile.</i>		
Pine, plain maple and bass wood,.....	3½	4
Hemlock,.....	3	4
Oak, ash, and all not enumerated,.....	4	4
SHINGLE IN BOATS.		
<i>per 1000 per mile.</i>		
Pine, for the first 25 miles, (thence 3 mills per mile for remaining distance,).....	6-10	8-10
Hemlock for first 25 miles, thence 2 mills per mile for remaining distance,.....	4-10	8-10
SHINGLE IN RAFTS.		
<i>per 1000 per mile.</i>		
Pine or Hemlock,.....	8-10	8-10
WOOD IN BOATS.		
<i>per cord per mile.</i>		
Cord wood from one to ten miles, (and for every additional mile one cent per cord, but not to exceed fifty cents per cord for any distance).....	4	4
Articles not enumerated, going from tide water per ton,.....	3	4
Articles going towards tide water,.....	2	4
Pleasure boats, on the capacity of the boat,.....	4	4
MILEAGE ON BOATS LADEN OR EMPTY:		
<i>per mile on the boat.</i>		
Going towards tide water,.....	2	
Coming from tide water,.....	4	
When toll is charged per ton on the capacity of the Boat, no additional charge will be made for mileage on said boat.		



1841

**“NOTICE TO BOATMEN. / THE DELAWARE & HUDSON / CANAL COMPANY *will pay the following freight for transporting COAL from HONESDALE to RONDOUT, on their Canal the ensuing season, viz.--*** / Running Company’s Boats with an agreement to purchase, and paying \$10 per trip on said boat, and making not less than 17 trips with said boat during the season, \$1.40 per ton freight. / Running Company’s boats with an agreement to purchase, and paying \$10 per trip on said boat and making a trip in 9 days or less time, \$1.40 per ton freight. / Running Company’s boats with an agreement to purchase, and paying \$10 per trip on said boat, and making a trip in 10 days, \$1.35 per ton freight. / Running Company’s boats with an agreement to purchase, and paying \$10 per trip on said boat, and not more than 10 days making a trip, \$1.30 per ton freight. / Individuals executing a contract to run their boats in the company’s business will be paid the same freight as Company’s boats. / Application for boats can be made to the Collectors and Superintendents on the line of Canal, or at the Company’s office at Rondout. / R. F. Lord, *Engineer*. / Office of the Delaware & Hudson Canal Co., Honesdale, March 10, 1840.” (*Carbondale Journal*, January 7, 1841, p. 4)

1841

## Notice to Boatmen

*Carbondale Journal*, June 10, 1841, p. 3:

**NOTICE TO BOATMEN.**  
**THE DELAWARE & HUDSON**  
**CANAL COMPANY** will pay the following  
freight for transporting COAL from HONES-  
DALE to RONDOUT, on their Canal the ensu-  
ing season, viz:—  
Running Company's Boats with an agreement  
to purchase, and paying \$10 per trip on said  
boat, and making not less than 17 trips with said  
boat during the season, \$1,40 per ton freight.  
Running Company's boats with an agreement  
to purchase, and paying \$10 per trip on said boat  
and making a trip in 9 days or less time, \$1,40 per  
ton freight.  
Running Company's boats with an agreement  
to purchase, and paying \$10 per trip on said  
boat, and making a trip in 10 days \$1,35 per ton  
freight.  
Running Company's boats with an agreement  
to purchase, and paying \$10 per trip on said  
boat, and not more than 10 days making a trip, \$1,30  
per ton freight.  
Individuals executing a contract to run their  
boats in the company's business will be paid  
the same freight as Company's boats.  
Application for boats can be made to the Col-  
lectors and Superintendants on the line of Ca-  
nal, or at the Company's office at Rondout.  
R. F. LORD, *Engineer.*  
Office of the Delaware & Hudson }  
Canal Co., Feb. 20, 1841. }

1859

## Notice to Boatmen

*Weekly Advance*, March 5, 1859, p. 3:

**Notice to Boatmen.**

*Rates of Freight and Terms for boating  
Coal for the Delaware & Hudson Canal  
Company on their Canal, and on the  
North River, during the Boating Season  
of 1859.*

**T**HE Delaware and Hudson Canal Company are now prepared to receive applications for boats to be contracted for and employed in freighting Coal from Honesdale to Rondout and intermediate places on the line of Canal and also to New York, and other places on the North River.

The rate of freight for Boats making trips from Rondout to Honesdale, and returning laden with Coal, will be, during the season of 1859, 80 cts per gross ton, and in proportion for less distances. All full trips ending at Rondout.

The following instalments will be reserved from the freight on each trip, toward the payment of the Boat, viz :

On Full (or River) Boats,	\$20
“ First model scows,	15
“ Last do. do. & section boats,	22

There will also be reserved \$7 and the fractions of a dollar, out of the freight of each trip, until the close of the season, as per contract.

The Boats will be unloaded by the Company, for which 5 cents per ton will be charged and reserved out of the freight of each trip. The boatmen in all cases to tend guy when required to do so.

The River freight from Rondout to New York will be 23 cents per gross ton, reserving therefrom \$6 per trip toward the payment of the Boat. The freight and instalments to be in proportion for less distances.

Towing and Wharfage free.

The Company have several new Scows and rebuilt Boats to be used the coming season, on which \$50 will be required to be paid in cash by the party agreeing to purchase, at the time of making such agreement.

Applications for Boats to be made personally or by letter to the undersigned, at the Office of the Delaware & Hudson Canal Co., Rondout, Ulster County, N. Y.; to R. F. Lord, Esq., Honesdale, Pa., or to the Superintendents on the line of the Canal.

L. A. SYKES, Agent.



1859

## Rates of Toll

Weekly Advance, March 5, 1859, p. 3:

<b>RATES OF TOLL</b> ON THE <b>DELAWARE &amp; HUDSON CANAL</b> <b>FOR 1859.</b>					
<i>Boats going from Tide Water not to carry  Cargoes exceeding SIXTY TONS.</i>					
<p><b>T</b>HE first column shows the rate per mile. subject to special contract. The second column shows the highest charge for any distance not exceeding 60 miles. The third column shows the highest charge for any distance not exceeding 108 miles, when the Rules and Regulations are complied with. The fourth column shows the legal rates in cents per ton per mile on the capacity of the Boat.</p>					
Articles per Ton per Mile.	Rate per Mile.	Total 60 Miles.	Total 108 Miles.	Legal Rate.	
Merchandise, Dry Goods.	Cts.	\$ c.	\$ c.	Cts.	
Iron and Nails up the Canal, Steel, Marble, Mill and manufactured stone, and Cotton in bales and bags, Liquors, Passengers' Baggage and Furniture.....	3½	1 00	2 00	4	
Molasses, Sugar, Pot and Pearl Ashes and Iron Castings.....	3 1	00	2 00	4	
Salt and Salted Provisions.	3½	85	1 75	4	
Flour, Meal and Grain, except Oats.....	2½	75	1 50	4	
Leather and Hides.....	3	60	1 60	4	
Tanners' Bark, Fire Brick, Fire Stone, materials for Glass ware Crates, and Charcoal.....	1½	50	1 20	4	
Fig Iron, Plaster - Paris, Prested Hay, Potatoes, Apples, Common Brick down Canal, Stone, Lime Sand, Iron Ore, Potters' Clay, Ashes, Lath, Fence Posts, Rails, Hoop Poles, Staves, Heading, and Oats.....	1	30	75	4	
Nails and Iron down Canal	1	50	1 00	4	
Hydraulic Cement going from tide water.....	1	50	1 00	4	
Hydraulic Cement in stone or manufactured, going towards tide water, on the capacity of the boat, for first 4 miles four cts., per ton, thence.....	2	rate	rate	4	

Glass-ware down the Can'l	2	rate	1 00	4
Broken Glass, for manufac-				
turing, up Canal.....	1½	rate	1 00	4
Common Brick up Canal.	1	30	50	4
Anthracite Coal up N. Y.				
section of Canal, on the				
capacity of the boat ....	8	rate		8
Anthracite Coal, up Penn-				
sylvanias section of Can'l				
on the capacity of the				
boat.....	1½	rate	rate	
Anthracite Coal, down N.				
York section of Canal				
on the capacity of the				
boat, unless by special				
contract.....	4	rate	rate	8
Anthracite Coal, down				
Pennsylvania section of				
Canal, on the capacity				
of the boat, unless by				
special contract .....	½	rate	rate	
Bituminous Coal .....	2	50	1 00	4
Manufactures of Wood,				
Window Glass, and Soda-				
ash, and Salt for manu-				
facturing Glass .....	2	50	1 00	4
Articles not enumerated...	3	1 00	2 00	4
All articles of Rafts .....	4	rate	rate	4
<i>Boards, Plank, Scantling,</i>				
<i>and all Sawed Lumber</i>				
<i>in Boats, per 1000 Feet</i>				
<i>Board Measure, per mile</i>				
Pine, plain Maple, Bass-				
wood, Ash, Oak, Cherry,				
Whitewood, and Ches-				
nut.....	1½	rate	1 00	4
Hemlock.....	1¼	50	75	4
Curled and Speck Maple,				
and all unenumerated ...	2	1 00	2 00	4
<i>Timber in Boats, per 100</i>				
<i>Cubic feet per mile.</i>				
Ship Timber .....	3	1 20	2 00	4
Pine, plain Maple, Ash, Oak				
and Chestnut.....	1¾	rate	1 10	4
Hemlock.....	1½	60	90	4
Curled Maple, and all un-				
enumerated .....	2	1 10	2 10	4
<i>Shingles in Boats per 1000</i>				
<i>per mile.</i>				



Pine .....	$\frac{1}{2}$	20	30	8-10
Hemlock .....	4-10	10	20	8-10
<i>In Rafts.</i>				
Boats are to have a preference over Rafts in passing the Locks.				
All Boards, Plank, Scantling and Sawed Lumber, per 1000 feet, board measure, per mile in rafts...	4	rate	rate	4
All Timber, per 100 cubic feet per mile.....	4	rate	rate	4
All Shingles, per 1000 per mile .....	8-10	rate	rate	8-10
Wood per Cord per mile...	4	rate	rate	4
<i>Wood in Boats per Cord per Mile.</i>				
For the first 5 miles, (then for every additional mile 1 cent .....	4	35	35	4
Packets and Pleasure Boats carrying Passengers, on the capacity of the boat, per ton per mile.....	3	rate	rate	4
Mileage on Boats laden or empty, per mile on the Boat .....	3	rate	rate	4

N. B.—When toll is charged on the capacity of the Boat, no additional charge will be made for mileage on said Boat.

Mileage on Boats engaged in the Coal business when carrying other freight than Coal, will be charged at the rate of two mills per ton per mile, when the quantity of said freight is less than 5 tons, and full mileage when said freight exceeds 5 tons.

OFFICE DEL. & HUD. C. Co., }  
February, 1859. }

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1859

Notice to Boatmen

*Carbondale Advance*, March 26, 1859, p. 3:

## Notice to Boatmen

*Rates of Freight and Terms for boating Coal for the Delaware & Hudson Canal Company on their Canal, and on the North River, during the Boating Season of 1859.*

**T**HE Delaware and Hudson Canal Company are now prepared to receive applications for boats to be contracted for and employed in freighting Coal from Honesdale to Rondout and intermediate places on the line of Canal and also to New York, and other places on the North River.

The rate of freight for Boats making trips from Rondout to Honesdale, and returning laden with Coal, will be, during the season of 1859, 80 cts. per gross ton, and in proportion for less distances. All full trips ending at Rondout.

The following instalments will be reserved from the freight on each trip, toward the payment of the Boat, viz :

On Full (or River) Boats,	\$20
" First model scows,	15
" Last do. " do. & section boats,	22

There will also be reserved \$7 and the fractions of a dollar, out of the freight of each trip, until the close of the season, as per contract.

The Boats will be unloaded by the Company, for which 5 cents per ton will be charged and reserved out of the freight of each trip. The boatmen in all cases to tend guy when required to do so.

The River freight from Rondout to New York will be 23 cents per gross ton, reserving therefrom \$6 per trip toward the payment of the Boat. The freight and instalments to be in proportion for less distances.

Towing and Wharfage free.

The Company have several new Scows and rebuilt Boats to be used the coming season, on which \$50 will be required to be paid in cash by the party agreeing to purchase, at the time of making such agreement.

Applications for Boats to be made personally or by letter to the undersigned, at the Office of the Delaware & Hudson Canal Co., Rondout, Ulster County, N. Y.; to R. F. Lord, Esq., Honesdale, Pa., or to the Superintendents on the line of the Canal.

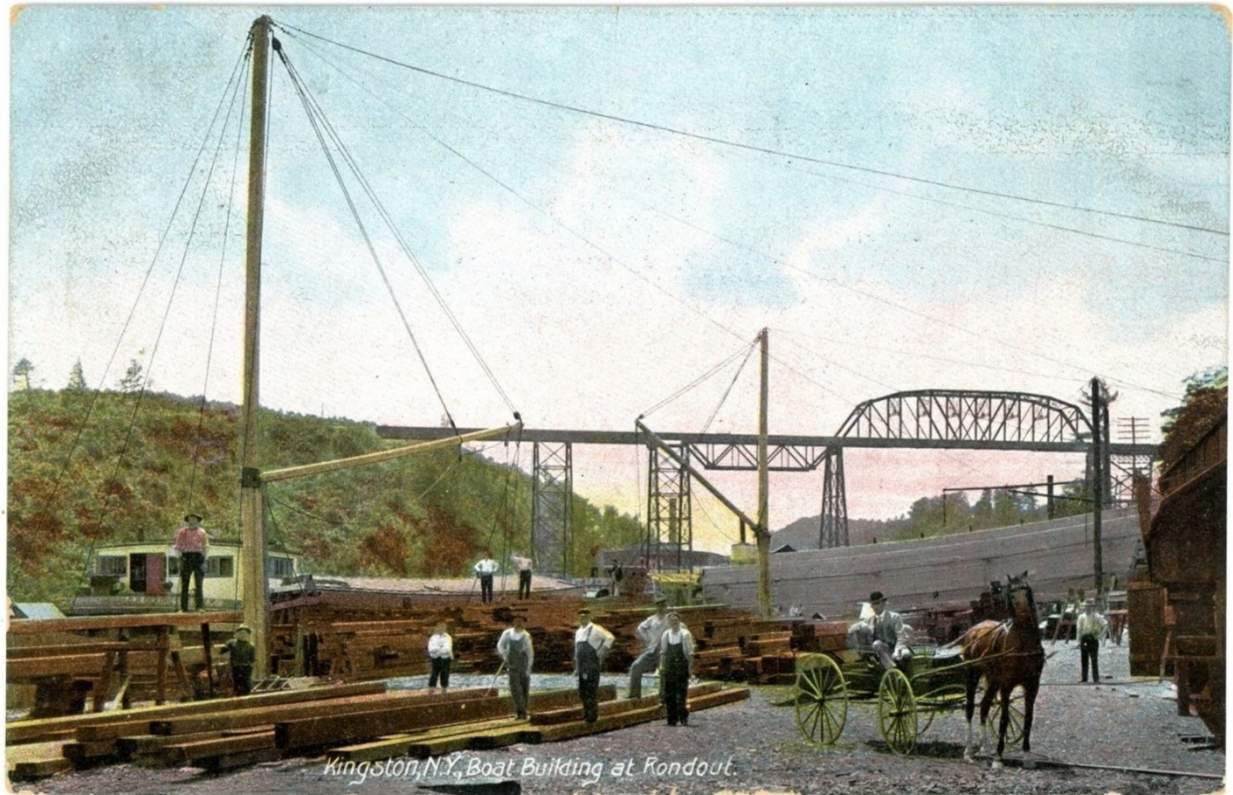
L. A. SYKES, Agent.

Rondout, March 19, 1859.

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12. *Kingston, N. Y., Boat building at Rondout.*

Post card, downloaded from E-Bay, June 23, 2016; thanks to John V. Buberniak



*Kingston, N. Y., Boat building at Rondout.*

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